COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS
AUGUST 1946

How much weight do you carry ?

THERE'S one best way to buy trucks . . . the best trucks you've ever owned.

First, you go to your nearest Dodge dealer. You tell him *what* you haul and *where* you haul it. Then he'll ask you, "How much weight do you carry?"

Your answer, whether it's in pounds or tons, is the key to the truck your Dodge dealer will recommend. It will be a Dodge *Job-Rated* truck . . . engineered and built for the *weight* of your loads, and for your operating conditions.

Your new truck will have the right power for your loads . . . the right transmission . . . the right clutch, springs, brakes, tires, axles and gear ratios. All will be *Job-Rated* to give you maximum performance, endurance and economy.

For the soundest truck investment you've ever made, see your Dodge dealer now . . . for the Dodge *Job-Rated* truck that fits *your* job.

GOOD SERVICE "CARRIES A LOT OF WEIGHT," TOO

When you buy new trucks, don't overlook the importance of good service—the kind of good, dependable service you can expect from your Dodge dealer; and the quick availability of parts when you need them.

TRUCKS FOR 97% OF ALL HAULING NEEDS

Dodge *Job-Rated* trucks include panels, pick-ups, stakes, tractors and many chassis-and-cab models (conventional and cab-over-engine design) . . . ranging all the way from light delivery models up to heavy-duty tractors of 35,000-pound tractor-trailer gross weight capacity.

DODGE DIVISION OF CHRYSLER CORPORATION

DODGE *Job-Rated* TRUCKS

FIT THE JOB . . . LAST LONGER

COMMERCIAL CAR JOURNAL

with which is combined Operation & Maintenance
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EDITORIAL CONTENTS

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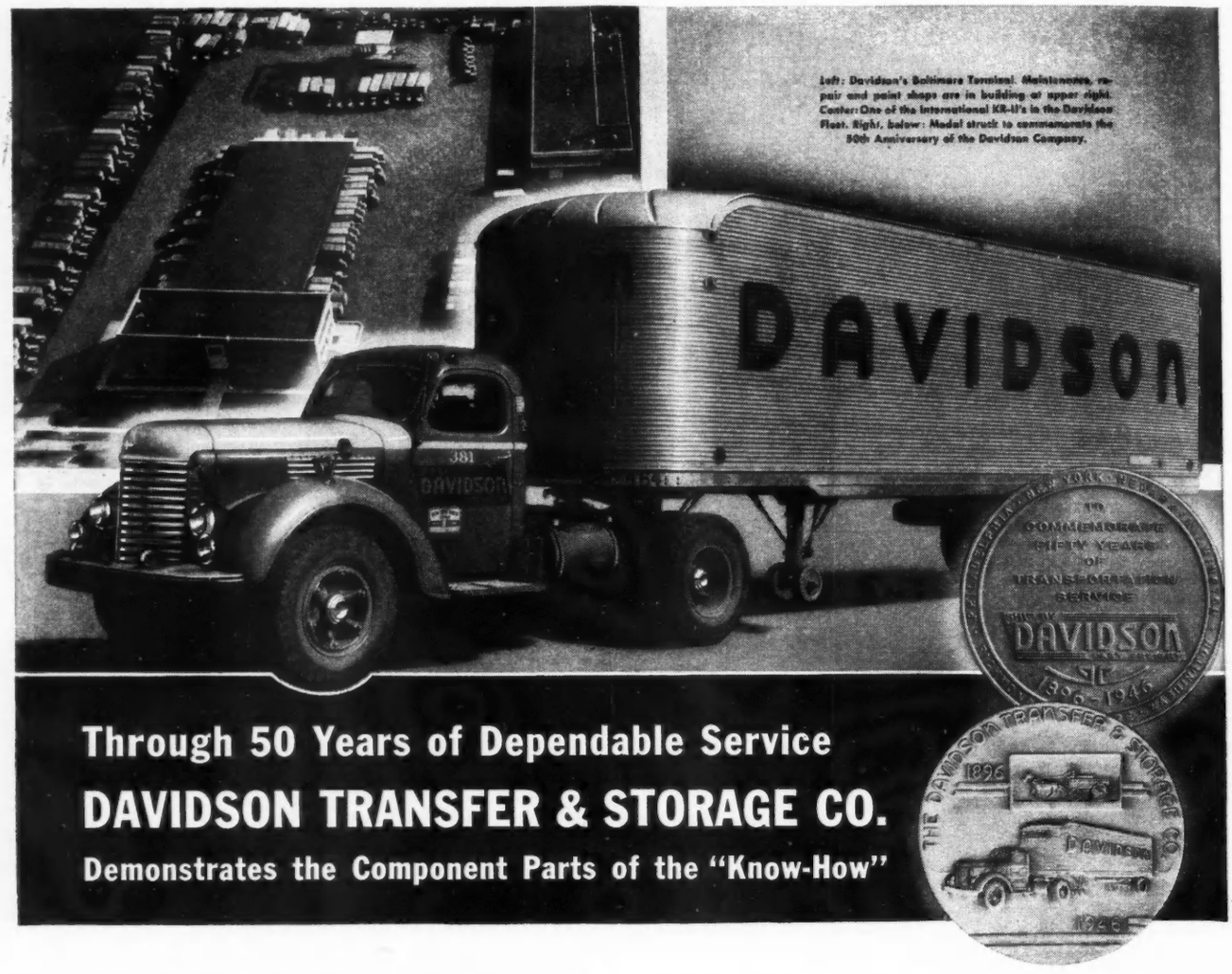


Left: Davidson's Baltimore Terminal. Maintenance, repair and paint shops are in building at upper right. Center: One of the International KR-11's in the Davidson Fleet. Right, below: Medal struck to commemorate the 50th Anniversary of the Davidson Company.

Through 50 Years of Dependable Service

DAVIDSON TRANSFER & STORAGE CO.

Demonstrates the Component Parts of the "Know-How"

● The Davidson brothers will tell you that the success of the Davidson Transfer & Storage Co., Baltimore, results from this:

A knowledge of the component parts that make up the "know-how" of truck transport.

They will point out that this knowledge began with their father 50 years ago, when a horse-drawn dray with the name Davidson on it appeared on the streets of Baltimore.

They will show you that their business employs 619 people, maintains five terminals and operates 358 pieces of equipment with International Trucks and Tractors predominant. They will show you how their business is conducted with almost watch-like precision.

They will, in short, show you evidence of business efficiency of the highest order.

But go out on the loading dock, into the shops, or through the offices and you find evidence of another kind. You find an employe morale that ranks Davidson high among companies whose personnel relations are best. You find that long employe service records are common, until you are not surprised when a foreman or superintendent says, "Oh, I've been with Davidson for 25 years." And you find that the Davidson employes work their heads off to give shippers service, because good service to shippers means success for Davidson.

Sure, the Davidson operation is efficient. Probably none in the truck transport business is more efficient. But contributing greatly to Davidson efficiency is something even more admirable—the human something that exists between the Davidson management and its employes.

And after 50 years in the cartage and transport business, that human something is, most certainly, the thing in which the Davidsons take greatest pride.

Motor Truck Division
INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

Tune in "Harvest of Stars" Sunday, 2 p.m. Eastern Daylight Time, NBC Network

INTERNATIONAL

INTERNATIONAL Trucks

'46 New Truck Registrations May Set All-Time Record

by MARCUS AINSWORTH
Commercial Car Journal Statistician

WITH this issue of COMMERCIAL CAR JOURNAL we are once again able to renew for our readers the prewar service of providing new truck registrations by makes and by months. This service which was discontinued in March, 1942, will once again be a special monthly feature of COMMERCIAL CAR JOURNAL.

During the first four months of 1946 there were 128,295 new trucks registered throughout the United States. For the same period of 1941, the last complete year for which new truck registrations are available, there were 227,603 new trucks registered, indicating a decline for 1946 from 1941 of about 43.5 per cent. However, on the basis of partial returns for the month of May, this gap is rapidly being closed. Returns from 41 states, for that month, are behind 1941 by only 16 per cent.

Of the 19 truck manufacturers whose new registrations are reported by R. L. Polk & Co. four companies, Chevrolet, Dodge, Ford and International were responsible for approximately 76 per cent of the new registrations. Ford is in the lead with 39,196 trucks registered in the first four months of the year. Dodge is running second with 26,308, International third with 18,524 and Chevrolet fourth with 13,449. In 1941 Chevrolet was in the lead followed by Ford, International and Dodge in the order named.

While the volume producers of trucks all show a decline in new registrations for the first four months of this year as compared with 1941 with the exception of Dodge who has a gain of 6300 units, many of the smaller manufacturers indicate material gains. Willys shows a 1510 per cent increase, Reo 420 per cent increase,

(TURN TO PAGE 194, PLEASE)

NEW TRUCK REGISTRATIONS*

First Four Months of 1946 and 1941 Compared

Make	Year	FOUR MONTHS: January, February, March	FOUR MONTHS: April	FOUR MONTHS: Units	FOUR MONTHS: % Change 1946 over 1941	FOUR MONTHS: Per Cent of Total	May (41 States†)
AUTOCAR	1946	967	320	1,287	+ 62.0	1.00	231
	1941	543	250	793	.....	.35	160
BROCKWAY	1946	851	311	1,162	+ 69.4	.91	209
	1941	458	229	687	.....	.30	130
CHEVROLET	1946	7,045	6,404	13,449	— 82.2	10.48	11,128
	1941	52,632	22,497	75,129	.....	33.01	14,915
DIAMOND T	1946	1,480	691	2,171	none	1.69	282
	1941	1,466	701	2,167	.....	.95	296
DIVCO	1946	676	389	1,065	+ 45.5	.83	319
	1941	516	217	733	.....	.32	154
DODGE	1946	17,969	8,339	26,308	+ 31.5	20.51	6,587
	1941	13,991	6,038	20,029	.....	8.80	4,180
FEDERAL	1946	890	315	1,205	+ 138.5	.94	347
	1941	368	137	505	.....	.22	128
FORD	1946	27,952	11,244	39,196	— 42.2	30.55	6,788
	1941	50,990	16,789	67,779	.....	29.78	12,903
F.W.D.	1946	114	53	167	+ 79.6	.13	30
	1941	75	18	93	.....	.04	7
G.M.C.	1946	1,460	954	2,414	— 83.5	1.88	1,393
	1941	10,456	4,267	14,723	.....	6.47	2,745
HUDSON	1946	311	241	552	+ 80.0	.43	226
	1941	213	94	307	.....	.13	45
INTERNATIONAL	1946	14,279	4,245	18,524	— 42.0	14.44	4,076
	1941	22,941	9,129	32,070	.....	14.09	6,256
MACK	1946	2,398	546	2,944	none	2.29	306
	1941	2,001	931	2,932	.....	1.29	639
PLYMOUTH	1946	3	1	4	.....	.....	1
	1941	2,636	1,041	3,677	.....	1.62	739
REO	1946	1,540	858	2,398	+ 420.0	1.87	473
	1941	307	154	461	.....	.20	107
STERLING	1946	135	57	192	+ 28.0	.15	24
	1941	102	48	150	.....	.07	26
STUDEBAKER	1946	1,785	1,348	3,133	+ 137.0	2.44	1,465
	1941	845	475	1,320	.....	.58	283
WHITE	1946	2,109	648	2,757	— 9.2	2.15	711
	1941	2,122	918	3,040	.....	1.34	594
WILLYS	1946	4,692	3,638	8,330	+1510.0	6.49	1,777
	1941	332	186	518	.....	.23	159
MISCELLANEOUS	1946	719	318	1,037	+ 111.0	.82	174
	1941	373	117	490	.....	.21	65
TOTAL	1946	87,375	40,920	128,295	— 43.3	100.00	36,547
	1941	163,367	64,236	227,603	.....	100.00	43,631

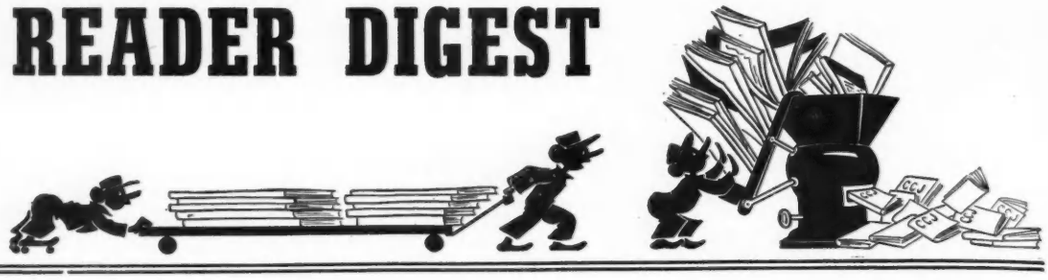
* Data from R. L. Polk & Co.
† Missing states are California, Illinois, Missouri, New York, Oklahoma, Texas, Vermont, and Wisconsin.

1946 DOMESTIC TRUCK FACTORY SALES BY GROSS VEHICLE WEIGHT*

1946 GVW (lb.)	January	February	March	April	May	June	6 Months
5,000 & less	17,331	11,822	14,433	23,956	23,122	29,657	120,321
5,001–10,000	3,151	2,785	2,343	11,755	8,683	4,898	33,615
10,001–14,000	6,713	5,479	4,388	15,731	19,563	9,799	61,673
14,001–16,000	6,457	3,156	5,630	7,105	4,360	2,377	29,085
16,001–19,500	1,121	869	325	1,516	1,635	1,279	6,745
19,501–26,000	1,950	1,569	1,104	1,547	1,576	1,309	9,055
Over 26,000	1,208	1,028	872	910	1,008	928	5,954
Total	37,931	26,708	29,095	62,520	59,947	50,247	266,448

* Source: Automobile Manufacturers Association.

CCJ READER DIGEST



To give busy readers basic facts quickly and simply, CCJ editors have condensed, on

ADVANCED, Wider Rim Program

by BART RAWSON, Associate Editor Commercial Car Journal

AFTER four years of steady progress, held back by shortages and the obvious struggle to keep everything and anything rolling, a new ADVANCED wide base rim program has been adopted and is being advocated for the industry.

Advantages of using wider base rims are summed p as: 1. more tread life, 2, reduced temperature, 3, fewer bead failures, 4. blowouts reduced, 5. less sway resulting in greater stability and, 6. tread less subject to cracks and bruises.

These advantages can be obtained in various stages on most truck models beginning with an oversized standard flat base rim, a practice which has been advocated for many years. Next comes the interim rim program using special adaptor rings on standard rims and finally the full advanced design rim with 5 deg. taper on both sides. The average ratio of tire cross section to rim width was 6⁰ per cent in 1940. With the advanced design rims this average ratio is increased to 70 per cent.

Status of present equipment and standard tire and rim equipment on all current truck models may be quickly determined from the tables furnished, together with recommended rim sizes for all truck tire sizes. Clearances and overall widths, however, particularly in the larger sizes must be closely analyzed. *See Page 38.*

Four Forms Flag High Fleet Costs

by C. V. BROWNLEE and JAMES HAMPTON,
Atlanta Laundries, Inc., Atlanta, Ga.

IN 1941 the total operation cost of our fleet, which then numbered 280 standard ½-ton panel trucks, amounted to $114,-272.20 or 4.988 per cent of net sales—excluding insurance and routemen's commissions but including taxes and other fixed charges.

The next year our fleet costs, with four less trucks, amounted to $97,245.30 or only 3.787 per cent of our net sales. That was a direct saving of 14.02 per cent, despite the fact that prices of parts and equipment already were on the way up.

Cost per mile in 1941 was $.0318; in 1942, $.0320. In 1941 we averaged 11.53 miles per gallon; in 1942, 12.01.

We are able to quote these figures with accuracy because of the very complete cost accounting plan we put into operation in 1939. We attribute a very large part of the savings indicated to the fact-finding information the accounting plan brought to light.

The key to the whole accounting system lies in four forms illustrated; namely, the Weekly Gas and Oil Report, the Garage Shop Charge and two sections of a Master Truck Cost and Performance Report.

By means of this accounting system, we have been able to reduce costs materially. *See Page 46.*

Facts for Fleets on Postwar Paints

TO SUBSTANTIATE or disprove rumors about the quality of postwar automotive finishes, CCJ went to the manufacturers for facts, not only concerning quality but also with regard to availability, the best type to use for refinishing and other related tips for fleet readers. Results of the survey can be summed up in these nine points:

1. Postwar quality is equal to prewar quality.
2. Alkyd resins and lacquers are only satisfactory types for automotive use, with alkyd resins leading in the commercial field.
3. There is nothing radically new now or due in the predictable future. This specifically includes the plastic bugaboo.
4. Availability is not too bright, due largely to heavy backlog of demand.
5. Quality of refinish can be comparable to original paint job—the product is the same.
6. Foundation of alkyd or synthetic resin paints is a by-product of coke to which is added glycerine and oil—all scarce items.
7. Lacquers are derived from cotton linters, also on the scarce list.
8. Alkyd resins are considered best for all-around shop use, including walls and machinery.
9. It pays to get the facts from highly trained field engineers. *See Page 42.*

8 Ways to Slap Down Sludge

by CARL GEORGI, Quaker State Oil Refining Corp.

ANALYSIS of many sludge samples over a period of years, and from a wide variety of engines in all kinds of service, has revealed a remarkable similarity in composition—somewhere around ⅛ to ½ oil, the balance being water, soot, carbon, lead salts, iron, silica, and "resins."

these pages, this month's leading articles.

None of these constituents originate in oil.

Water may be considered as the most objectionable contaminant of crankcase oil and is the chief cause of sludge formation.

Present-day engines and cooling systems apparently are designed to avoid all possibility of overheating but if engine cylinder walls operate at low temperatures, they act as condensers for the combustion gases, causing liquid water, unburned fuel, soot, carbon and lead salts to impinge on the oil films and wash down past the pistons into the crankcase; the volatile contaminants cannot be purged out through the ventilating system. The blow-by contaminants in the oil then accumulate and increase in quantity until a point is reached where they begin to coagulate and separate out as sludges.

In this first phase of formation, the sludge is most probably of the soft pasty type and can be readily carried by the oil to those parts of the engine where oil flow is slow or restricted and where it can settle out and deposit. This would account for the accumulation of deposits in such places as valve galleries, overhead rocker-arm compartments, timing gear cases, etc.

Heavy-duty detergent oils have the property of retaining sludges and contaminants in dispersion in the oil, and will aid greatly in minimizing sludge troubles and in maintaining cleaner engines in many operations. However, detergent additives used in H-D oils do not have an unlimited capacity to hold sludge and contaminants in suspension.

When engine operating conditions are such that excessively high rates of contamination prevail, the oil must be given some measure of assistance to do the job. Eight such measures are outlined on Page 56.

Mistletoe Assays Safe Driving

by H. H. GOFF, Mistletoe Express Co., Inc., Oklahoma City

WHILE Mistletoe has won top place for the third consecutive year in the National Fleet Safety Contest, we have, nevertheless, revised and reorganized our method of hiring drivers. The new system is designed to obtain a high rejection of applicants unfitted for the job.

Each applicant is interviewed by the department head under whose direction he will work. Next the data on the application is checked with the state highway patrol for accident records, and further checked for criminal evidence.

After this, we try to determine if he has, or will develop, the right attitude toward the company. Then he is sent to the doctor and given a full physical check up in our own clinic.

. . . the applicant still has a long way to go. He then comes to me. We test for color blindness, side angle of vision, depth perception, and night blindness. We then give him a 10-mile driving test to study his driving habits.

We have found that we can have a good vehicle and a good man physically and still have plenty of trouble. So, we have evolved this formula: Vehicle 20 per cent, Man 20 per cent, Attitude 60 per cent.

We then go over a safety booklet with the successful applicant.

Our records prove that our practice has a direct beneficial bearing on business and, consequently, on our earnings and wages paid employees.

We have just completed a survey in which a neutral agency called on our customers all over the state with several questions. Tabulation of returns revealed that of all transportation companies serving them 51 per cent said Mistletoe was most efficient. The nearest competitor got 15 per cent. As to dependability, returns gave us 54 per cent, with the nearest competitor receiving 12.

These figures certainly prove the wisdom of our course. *See Page 64.*

Truck Makers Stand Pat on Discounts

THERE has been some thought in truck circles that, perhaps with manufacturers being able to sell all the trucks they can build, the traditional discount might be abandoned. COMMERCIAL CAR JOURNAL has made a survey of present discount practices among manufacturers, on both cars and trucks, and it is quite evident from the answers received from those who cooperated that nearly every company which allowed a factory discount before the war is continuing the practice during the current sellers' market.

In some cases, dealer discounts still are followed; in many others they have been dropped for the present. The manufacturers report they do not interfere with the dealers on this point.

The agreements of the various manufacturers are fairly uniform. They generally call for a discount of 3 per cent, which applies retroactively after the first 20 cars and/or trucks are purchased in the contract period.

Discounts given by dealers are largely a matter of negotiation between buyer and seller.

Methods of distributing vehicles to old fleet customers also vary between companies. Fargo Div. of Chrysler Corp., which handles fleet sales, and Ford allocate on an historical basis. Chevrolet is allocating its vehicles to dealers on their historical sales record and allowing them to make an equitable distribution among fleet operators in their territories.

Most manufacturers are planning to broaden their fleet service departments. *See Page 45.*

Solving Propeller Shaft Problems

ANY attempt to spot propeller shaft trouble by the sound of disturbance is usually doomed to failure. There are very few mechanics who can determine by sound whether the trouble is in the transmission, the differential, or in the propeller shafts. The reason for this is that the rumbling sound so often accompanying an unbalanced propeller shaft is almost indistinguishable from the sound that results from transmission and differential gear disturbances.

Correct installation, disassembly and assembly of propeller shaft in proper alignment is the key to most propeller shaft problems.

Step-by-step procedure with illustrations is given in detail. *See Page 52.*

TABLE I—Comparison of Various Truck and Bus Tire and Rim Combinations

	(1)				(2) Corresponds to First Wide Base Rim Program			(3) Advanced Wide Base Rim Program			(4)		
	1940 Conventional Flat Base Rims				1946 Conventional Flat Base Rims			1946 Advanced Design Rims			1946 Interim Changeover Rims		
Tire Size	Rim Size*	Old Rim Designation	Tire Width	Per Cent Rim Width / Tire Width	Rim Size*	Tire Width	Per Cent Rim Width / Tire Width	Rim Size*	Tire Width	Per Cent Rim Width / Tire Width	Rim Size*	Tire Width	Per Cent Rim Width / Tire Width
6.50	**5.75P**	(5″)	**6.75**	**56**	**4.33R** 3.75P	**6.95** **6.75**	**62** **56**	**5.0**	**7.25**	**69**	**5.00R** 4.50R	**7.25** **7.05**	**69** **64**
7.00	**4.33R** 3.75P	(6″) (5″)	**7.30** **7.10**	**59** **53**	**5.00S** 4.33R	**7.57** **7.30**	**66** **59**	**5.5** 5.0	**7.75** **7.57**	**71** **66**	**5.50S** 5.00R	**7.75** **7.57**	**71** **66**
7.50	**5.00S** 4.33R	(7″) (6″)	**8.00** **7.73**	**63** **56**	**6.00T** 5.00S	**8.40** **8.00**	**71** **63**	**6.0** 5.5	**8.40** **8.20**	**71** **67**	**5.00S** 5.50S	**8.40** **8.20**	**71** **67**
8.25	**5.00S**	(7″)	**8.60**	**58**	**6.00T** 5.00S	**9.00** **8.60**	**67** **58**	**6.5** 6.0	**9.20** **9.00**	**71** **67**	**6.50T** 6.00S	**9.20** **9.00**	**71** **67**
9.00	**6.00T** 5.00S	(8″) (7″)	**9.70** **9.30**	**62** **54**	**7.33V** 6.00T	**10.25** **9.70**	**71** **62**	**7.0** 6.5	**10.10** **9.90**	**69** **66**	**7.00T** 6.50T	**10.10** **9.90**	**69** **66**
10.00	**7.33V** 6.00T	(9-10″) (8″)	**10.75** **10.20**	**68** **59**	**7.33V**	**10.75**	**68**	**7.5** 7.0	**10.82** **10.62**	**69** **66**	**8.00V** 7.00T	**11.02** **10.62**	**72** **66**
11.00	**7.33V**	(9-10″)	**11.20**	**65**	**8.37V** 7.33V	**11.65** **11.20**	**72** **65**	**8.0** 7.5	**11.47** **11.27**	**70** **67**	**8.00V**	**11.47**	**70**
12.00	**8.37V** 7.33V	(11″) (9-10″)	**12.25** **11.80**	**68** **62**	**8.37V** 7.33V	**12.25** **11.80**	**68** **62**	**8.5** 8.0	**12.30** **12.10**	**69** **66**	**9.00V** 8.00V	**12.50** **12.10**	**66**
13.00	**8.37V**	(11″)	**13.15**	**64**	**8.37V**	**13.15**	**64**	**9.0** 8.5	**13.40** **13.20**	**67** **64**	**9.00V**	**13.40**	**67**
14.00	**10.00W** 8.37V	(11″)	**14.75** **14.10**	**68** **59**	**10.00W** 8.37V	**14.75** **14.10**	**68** **59**	**10.0** 9.0	**14.75** **14.35**	**68** **63**	**10.75W** 9.00V	**15.05** **14.35**	**72** **63**

* Bold type designates "recommended"; light type designates "permissible."

Data Supplied by Tire and Rim Association

ADVANCED Wider Rim Program

Greatly increased tread life can be obtained with many truck models by use of proper rims. Here is latest information on oversized, interim and advanced rims

by BART RAWSON
Associate Editor, Commercial Car Journal

AMONG the little-publicized but none-the-less noteworthy war-born improvements in truck transportation has been the gradual trend toward wider rims for truck tires. After four years of steady progress, held back by shortages and the obvious struggle to keep everything and anything rolling, a new ADVANCED wider base rim program has been adopted and is being advocated for the industry. To get maximum efficiency out of each tire size, entirely new rim sizes are recommended. Although it will take time and money to get the new rims, even on new equipment, readers may rest assured that better tire performance is around the corner. For some, it is available now.

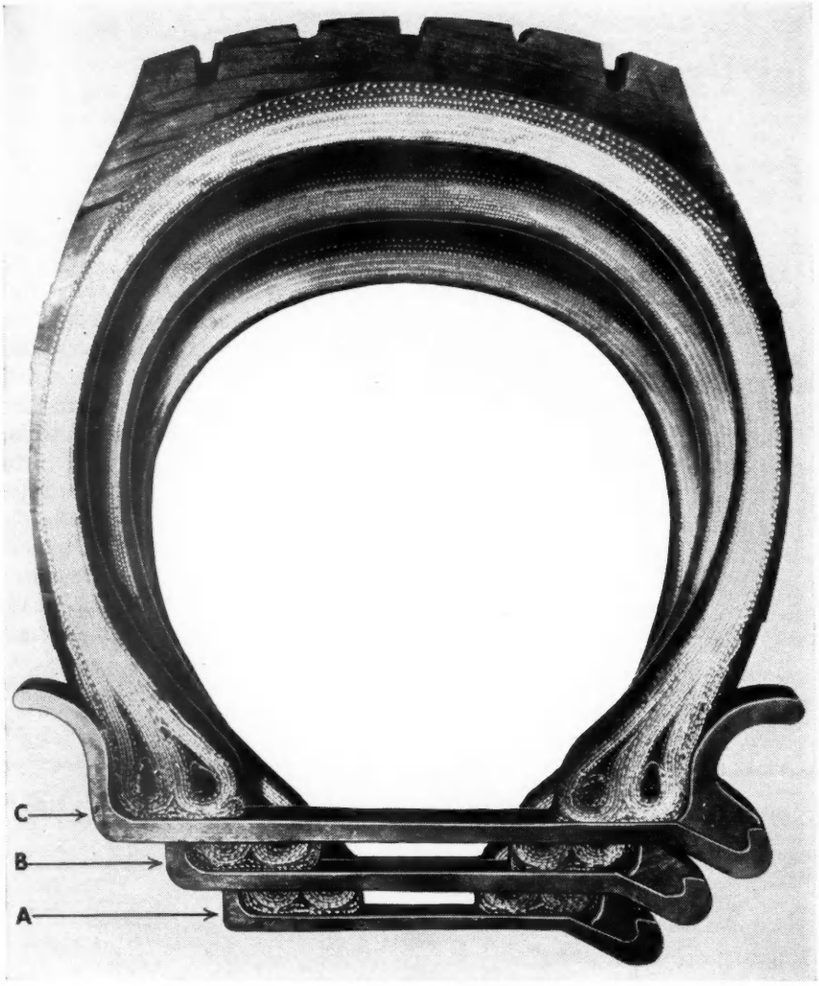


Photo at left, prepared by National Wheel and Rim Association, shows actual cross section of 9.00 x 20 tire mounted on (A) 5.00S (B) 6.00T and (C) 7.33 rims. Note how sidewalls are straightened, thereby strengthened, as rim width is increased. Recommended advance design rim for this size tire is 7.0, slightly smaller than (C). A cross section of this rim, with full 5 deg. taper on both sides is reproduced on *Page 41*

for Tire Economy

The wider base rim program got started when tire and rim engineers discovered that by the simple expedient of using one size wider rim with the same size tire a marked improvement in tire performance could be expected. That process is now known as the first or original conventional wide base program. In October, 1942, COMMERCIAL CAR JOURNAL set forth these claims and backed them up with actual reports from fleet users who were sold on the advantages, based on actual operating experience.

Principal Advantages

THESE advantages were then, and may still be, briefly summarized by the following six points. As you read them glance at the exact scale photograph at the top of the page showing a 9.00 x 20 tire mounted on three different rim sizes.

1. More tread life—up to 30 per cent increase in actual user tests.

2. Reduced temperature—especially valuable in critical conditions—accomplished largely through less tire flexing, better distribution of flexing and Greater Area of Tread Road Contact.

3. Fewer bead failures due to rocking of beads, because beads are no longer forced into narrow pinched position.

4. Blowout hazard reduced as a result of reduced flexing, and resulting cooler running.

5. Less sway, resulting in greater stability, more tread-life and safer driving.

6. Tread more compact, with lower tension; therefore, less subject to cracks and bruises.

The First Step

THE original rim over-sizing program, using wider conventional rims, was a good plan as far as it went. It gave fleetmen a considerable improvement at minimum cost. But it simply did not go far enough, and a glance at Table I will show why. Note the first group of figures at the extreme left which show tire and rim combinations that were the generally accepted standard at the beginning of 1940. Note that the ratio of rim width to tire cross section averaged about 60 per cent.

The second series of figures shows what happened to that ratio under the first wide base rim program when larger size rims were used. Although an average of these ratios would approximate 65 per cent, a figure sometimes used in discussion of various steps of the wide base program, the important thing to note is the wide variation in these ratios ranging from 62 per cent to 72 per cent. Obviously a much better ratio was being obtained in some sizes than in others.

The Advanced Program

TO SMOOTH out this ratio and bring all figures as near the optimum figure of 70 per cent as possible, the Advanced wide base program was born. (See third group of figures Table I). This entailed the creation of an entirely new series of rim sizes to fill the gaps between existing sizes. In the smaller sizes, the new program called for a definite additional increase in rim width, but in the larger sizes the change was

(TURN TO NEXT PAGE, PLEASE)

ADVANCED, Wider Rim Program

(Continued from Page 39)

not nearly so marked, even cut back a little in certain sizes. This advanced series is designated by a figure carried to one decimal place, the figure corresponding in inches to the actual width of the rim between the inside perpendicular side of the flanges. At the same time a 5 deg. taper, raising the outside edge of each tire bead a very slight amount, was introduced. This slight taper strengethened the rim structure and greatly reduced the danger of rim damage and resulting tire troubles. It also centered the tire bead on the rim and Locked The Tire in Position Eliminating Motion At This Critical Point.

The Interim Program

WAR shortages, however, made the introduction of new rim sizes exceedingly slow. At least one volume truck producer was anxious to get started, asked the rim manufacturers what could be done. As a result, an interim program, (See fourth group of figures Table I) was developed through the simple expedient of adapting a new side ring to the old standard rim base. The new ring was designed, however, in such a way that an additional width, amounting to approximately half an inch could be obtained between the flanges.

At the same time, a taper was added on the side of the rim opposite the ring and the ring itself provided taper on the ring side. It was not possible, however, to extend the taper on the ring side the full width of the Advanced Series nor could the flange shape be changed because it used the old bases. Generally the two are the same except for these differences, provided they are used as complete units, that is proper base and new side rings. To differentiate

TIRE AND RIM COMBINATIONS OFFERED ON 1946 TRUCK MODELS

Shown in the table below are standard and maximum authorized tire sizes with corresponding standard rim sizes for current 1946 production truck models.

A comparison between these tire and rim combinations and the table of advanced, recommended and permissible practices on page 38 will quickly indicate that most models are being equipped with conventional flat base rims and that many date back to the 1940 recommendations.

A notable exception will be observed in the figures for Chevrolet, indicating that this manufacturer has shifted over to advanced design wide-base rims using recommended sizes in some instances, permissible sizes in others. The Autocar Co. is installing an advanced design wide base rim on one model. These are marked with an asterisk (*) in the table.

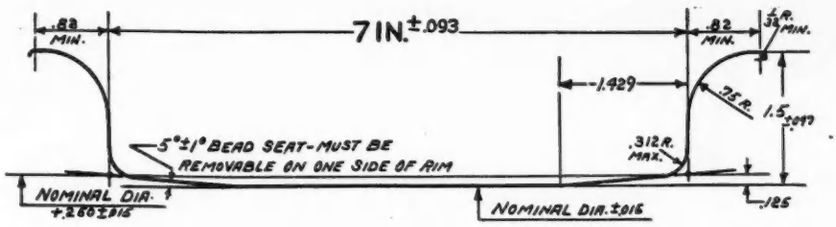
Many manufacturers are prepared to offer wider based rims on certain models (at extra cost) either at the factory or through dealer arrangements. Where such options have been specifically listed, they are shown by footnotes in the table. On many current models, particularly in larger sizes, wider than standard rims cannot be used because of clearance or width limitations.

Fleetmen should remember the advantages of wide base rims are available for use with many current truck models. In nearly all cases, however, such rims must be specifically ordered at time of purchase.

TRUCK MAKE AND MODEL (Current Production)	STANDARD EQUIPMENT		MAXIMUM AUTHORIZED	
	Tire Size	Rim Size	Tire Size	Rim Size
AUTOCAR				
C50, C50T, U50, U50T, DC100, DC100D	10.00 x 20	7.33	10.00 x 22	7.33
C5064	9.00 x 20	*7.00	10.00 x 20	7.33
C70, U70	11.00 x 20	7.33	.....	....
C70T, U70T	10.00 x 20	7.33	11.00 x 20	7.33
C70S, C70TS, U70S, U70TS	11.00 x 20	7.33	11.00 x 22	7.33
C90, C90T, U90, U90T	11.00 x 24	7.33	12.00 x 24	9.00
C90D, DC100D	12.00 x 24	9.00	14.00 x 24	8.37
DC100T	10.00 x 20	7.33	11.00 x 24	7.33
DC10064S	11.00 x 24	7.33	.....	....
BROCKWAY				
88WH	8.25 x 20	5.00	.....	....
146W	9.00 x 20	6.00	10.00 x 20	7.33
152W	10.00 x 20	7.33	11.00 x 20	7.33
154W	10.00 x 20	7.33	10.00 x 22	7.33
154WH	10.00 x 22	7.33	.....	....
260XW	11.00 x 22	7.33	11.00 x 24	7.33
CHEVROLET				
DJ	6.00 x 16	4.00	.....	....
DP	6.00 x 16	4.00	15 in.	5.50
DR	15 in.	5.50	7.00 x 17	*5.00
DS 3802, 12, 22, 32	7.00 x 17	*5.00	7.00 x 18	*5.00
3803, 8, 9	7.00 x 18	*5.00	.....	....
3804, 5, 7	7.00 x 17	*5.00	7.50 x 17	*5.00
PJ 4102, 12, 22, 32	7.00 x 20	*5.00	.....	....
4103, 8, 9	6.50 x 20	*5.00	7.00 x 20	*5.00
4104, 5	6.50 x 20	*5.00	.....	....
PK 4402, 12, 22, 32	7.00 x 20	*5.00	.....	....
4403, 8, 9, 16, 19, 29	6.50 x 20	*5.00	7.00 x 20	*5.00
PL	6.50 x 20	*5.00	7.00 x 20	*5.00
PVS, PWS	7.50 x 20	*6.00	.....	....
PP, PR, PS, PV, PW, PX	7.50 x 20	*6.00	8.25 x 20	*6.00
CORBITT (See Note 1)				
18TG, 22FG	9.00 x 20	6.00	10.00 x 20	7.33
22TG	10.00 x 20	7.33	10.00 x 22	7.33
25TG	10.00 x 22	7.33	11.00 x 22	7.33
28TG, 27TD, 28TD	10.00 x 22	7.33	11.00 x 24	7.33
DIAMOND T				
404HH, 509, 509SC	8.25 x 20	5.00	.....	....
614H	F 9.00 x 20	6.00	.....	....
	R10.00 x 20	7.33	.....	....
702	10.00 x 20	7.33	.....	....
806H	11.00 x 20	7.33	.....	....
900, 910, 900SD8010PA, 910SW3012PA	10.00 x 22	7.33	.....	....
910SDH62W	11.00 x 22	7.33	.....	....
DODGE (See Note 2)				
DUPLEX				
T-H	8.25 x 20	5.00▲	9.00 x 20	6.00
R-H	9.00 x 20	6.00	11.00 x 20	7.33
J-H	10.00 x 20	7.33	11.00 x 20	7.33
K-H	10.00 x 20	6.00	11.00 x 20	7.33
FEDERAL				
16Q, 16QZ	7.50 x 20	5.50	8.25 x 20	5.50
18M, 18MZ	8.25 x 20	5.50	9.00 x 20	6.50
29M, 29MZ, 29ML, 29MLZ, 29MA	9.00 x 20	6.50	10.00 x 20	7.33
45MP, 45MPZ	10.00 x 20	7.33	11.00 x 20	8.00
55MP, 55MPA, 60PA, 60PZ	11.00 x 20	8.00	11.00 x 24	8.00
65QZ	11.00 x 22	8.00	11.00 x 24	8.00
FORD				
Sedan Delivery	6.00 x 16	4.00	.....	....
½-Ton 69C, 6GC	6.50 x 16	4.50	.....	....
1 Ton 69Y, 6GY	F 7.00 x 17	4.33	.....	....
	R 7.50 x 17	4.33	.....	....
All Others	F 7.50 x 20	5.00	F 7.50 x 20	5.00
	R 7.50 x 20	5.00	R 8.25 x 20	5.00
FWD				
HA, HR, HG	7.50 x 20	5.00	10.00 x 20	6.00
SU	11.00 x 20	7.33	12.00 x 20	8.37
M7	12.00 x 20	7.33	12.00 x 24	7.33
M6X6	11.00 x 24	7.33	12.00 x 24	7.33

the interim rims from the full Advanced rims, the size is given with two decimal places. Thus a new type 6.5 rim is exactly equal in width to the old 6.00 rim extended by new rings to 6.50. But the difference in marking is as noted.

Table I sums up the comparisons between all types of these rims. It will be noted that *all* rim markings have now been changed to use the actual inch width marking plan either with one or two decimal places. It will be hard for fleetmen to break away from the old marking plan, but sooner or later they must get used to it to avoid being badly confused. For instance, the old 8 in. rim, used for years in combination with both 9.00 and 10.00 tires is no longer known as 8 in. but as size 6.00 which means that it is exactly 6 in. wide between the flanges. The new 8.00 or 8.0 rim, on the other hand, falls between the old 9/10 in. rim and the old 11-in. rim. The old 8-in. (6.00) rim is now obsolete for use on the 10.00 tire.



Cross section of 7.0 advanced rim with 5 deg. taper on sides. Rim designation denotes size in inches between inside perpendicular sides of flanges

Present Rim Equipment

TO FIND out exactly where existing equipment lines up with regard to tire-rim combinations attention is invited again to Table I. By carefully consulting it, readers may quickly determine their own status. If it is found that rims are only of the size indicated in the first group of figures, readers may rest assured that they are *not* getting the full service and other advantages cited above that they could be getting from

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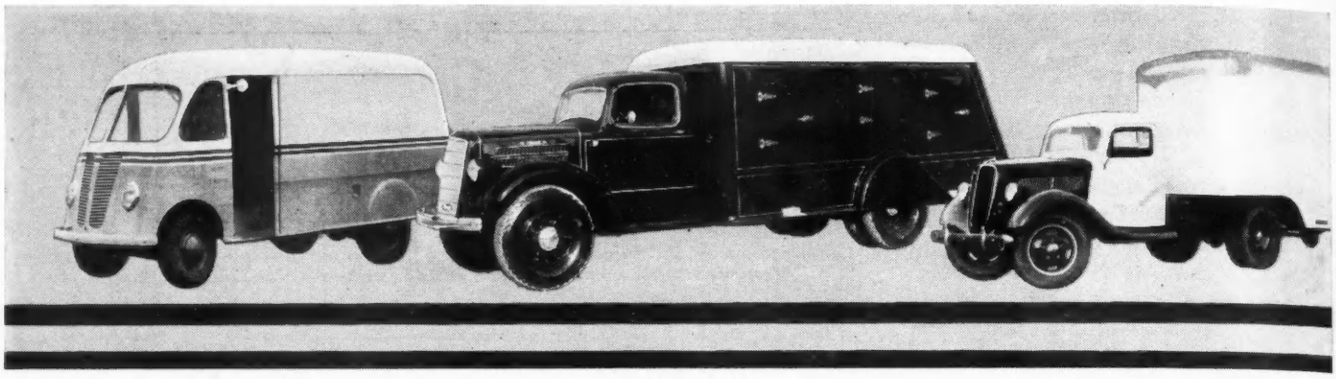
TRUCK MAKE AND MODEL (Current Production)	STANDARD EQUIPMENT		MAXIMUM AUTHORIZED	
	Tire Size	Rim Size	Tire Size	Rim Size
HUDSON				
58CM	6.50 x 16	4.50	.....	....
INTERNATIONAL				
K-1, K-2	6.00 x 16	4.50	7.00 x 16	4.50
K-1M	6.00 x 16	4.50	6.50 x 16	4.50
K-3, K-3M	7.00 x 16	5.50	7.50 x 16	5.50
K-5	6.00 x 20	5.00	8.25 x 20	6.00
K-6	6.50 x 20	5.00	8.25 x 20	6.00
K-7	7.00 x 20	5.00	9.00 x 20	6.50‡
K-8	7.50 x 20	5.50†	10.00 x 20	7.33
K-10	9.00 x 20	6.50‡	11.00 x 20	7.33
KR-11	9.00 x 20	6.50‡	12.00 x 20	....
KENWORTH				
521, 522, 523, 524, 525, 528, 532	10.00 x 20	7.33	11.00 x 22	7.33
548	11.00 x 22	7.33	12.00 x 24	8.37
552	11.00 x 24	8.37	13.00 x 24	....
MACK				
EES	7.50 x 20	5.00	8.25 x 20	6.00
EFS, EFUS	8.25 x 20	6.00	.....	....
EG, EGU, EGX, EGT	9.00 x 20	6.00	.....	....
EH, EHU, EHT, LFSW	10.00 x 20	7.33	10.00 x 22	7.33
EXH, EHUT, EQSW, EQUSW	10.00 x 20	7.33	.....	....
EQX	11.00 x 20	7.33	.....	....
LF, LFT	11.00 x 20	7.33	11.00 x 22	7.33
LJ	11.00 x 22	7.33	12.00 x 24	8.37
LJT	11.00 x 20	7.33	12.00 x 24	8.37
LJSW	11.00 x 20	7.33	11.00 x 24	7.33
LMU	12.00 x 24	8.37	.....	....
MARMON-HERRINGTON				
DVL-1	7.50 x 16	5.50	8.25 x 18	5.00
MH 440-4	9.00 x 20	7.33	10.00 x 20	7.33
MH 555-4	10.00 x 20	7.33	11.00 x 20	7.33
OSHKOSH				
W-307	10.00 x 20	7.33	11.00 x 20	7.33
W-700, W-703	11.00 x 20	7.33	12.00 x 20	7.33
W-906	12.00 x 20	8.37	14.00 x 20	8.37
PETERBILT				
270DD, 344DT	10.00 x 20	6.00+	11.00 x 22	7.33
345DT	10.00 x 20	6.00+	11.00 x 22	7.33△
354DT	10.00 x 20	6.00+	12.00 x 24	8.37
355	10.00 x 20	6.00+	14.00 x 24	10.00
REO				
19	7.50 x 20	5.00	8.25 x 20	5.00
21	8.25 x 20	6.00	9.00 x 20	6.00
22	9.00 x 20	6.00	.....	....
23, 24	10.00 x 20	7.33	.....	....
STERLING				
HC97, HD97	9.00 x 20	6.00∮	11.00 x 20	7.33
HC105, HD105, HCS195	10.00 x 20	6.00▼	11.00 x 22	7.33△
HC115, HD115	10.00 x 20	6.00▼	11.00 x 24	7.33△
HC144, HC147	10.00 x 22	6.00▼	12.00 x 24	7.33△
HD145	11.00 x 20	7.33△	12.00 x 24	7.33△
HC165, HCS265	11.00 x 24	7.33△	12.00 x 24	7.33△
HC175, HCS297	12.00 x 24	7.33△△	13.00 x 24	8.37
STERLING (Continued)				
HC250	14.00 x 20	8.37▼▼	.....	....
HDS140	9.00 x 20	6.00∮	10.00 x 20	7.33∮
HWS160	10.00 x 20	6.00▼	11.00 x 20	7.33
HWS235	11.00 x 20	7.33△	11.00 x 24	7.33△
HSC330	13.00 x 24	8.37	14.00 x 24	8.37
STEWART				
49A	9.00 x 20	6.00	.....	....
59A, 38A	11.00 x 20	7.33	.....	....
STUDEBAKER				
M5	6.50 x 16	4.50	.....	....
M15A-20	7.00 x 17	4.33	7.50 x 17	4.33
			7.00 x 20	4.33
M15A-28	7.50 x 17	4.33	7.00 x 20	4.33
M16	7.00 x 20	4.33	7.50 x 20	5.00
			8.25 x 20	5.00
WALTER (See Note 3)				
WARD LA FRANCE (See Note 4)				
WHITE				
WB-14	6.50 x 20	3.75	F8.25 x 20	5.00
			R9.00 x 20	6.00
WB-20, WB-20T	7.00 x 20	4.33	10.00 x 20■	7.33
WB-22, WB-22T, WA-122	7.50 x 20	5.00	11.00 x 20	7.33
WB-26	9.00 x 20	5.00	11.00 x 22	7.33
WB-28, WB-28T	9.00 x 20	6.00	11.00 x 24	7.33
WB-2264	9.00 x 20	6.00	10.00 x 20	7.33
WB-2864	9.00 x 20	6.00	11.00 x 22	7.33
WB-3264	10.00 x 20	7.33	12.00 x 24	7.33
WILLYS				
CJ-2A	6.00 x 16	4.50	7.00 x 15	4.50

ABBREVIATIONS

*—Advanced design rims
△—6.00T rim optional
†—Will change to 6.0 in near future
‡—Will change to 7.0 in near future
+—7.33 rim optional
△—8.00 rim optional
△△—8.00 and 8.37 rim optional
∮—7.00 rim optiona
▼—7.00 and 7.33 rims optiona
▼▼10.00 rim optional
F—Front
R—Rear
■—10.00 x 22 available on WB-20T rear only

NOTES

Note 1: Corbitt plans to adopt wide base rims as standard equipment in near future.
Note 2: Dodge expects rim size changes in near future. No data available at date of publication.
Note 3: Walter expects rim size changes in near future. No data available at date of publication.
Note 4: No data available at date of publication.



Survey of finish manufacturers spikes rumors of poor quality and sensational products; shows availability tight but chances for good refinish job bright

Facts for Fleets on

LIKE every one else these days, COMMERCIAL CAR JOURNAL has been hearing a lot of rumors about paint. Among them: "War paint definitely inferior to pre-war paint" or "Postwar paint still not up to scratch due to shortages of materials" or "Hold everything for new paints just around the corner—maybe even plastics."

To either substantiate or explode these rumors, we set out to see the manufacturers and told them we wanted an honest appraisal of the situation which we could pass along to readers in easy-to-understand language. Here is what they told us:

Fact 1: Quality OK

SPEAKING in terms of old established brand paints, specifically designed for automotive *spray-applied* finishes, there is no appreciable difference in quality between the prewar and postwar products. Quality of the wartime products, on the other hand, is a moot question. Some manufacturers insist that there was no let down in standards, others admit that the wartime products were inferior. Most reputable manufacturers who were compelled to slack-off in quality told their customers what to expect. Modern finishes, as we shall see later on, are compounded from extremely complex formulas. There have been substitutions of certain components, but basically the quality has remained the same.

Quantity, of course, has been extremely limited. For long periods during the past four years there was practically none at all for fleet users. At other times, there has been a meager supply.

Some brand names in *brushing* types have been available in inferior quality and usually have been so labeled. But, in nearly all instances, these brushing type finishes are entirely different products, even in normal times, from the automotive spray type. Compromises to reduce brush marks, prevent sagging and pulling and to meet other user requirements has always resulted in a somewhat inferior quality in the brushing type, at least from an appearance standpoint. That's a blow to the handyman painter, but accounts in large part for the reason the finish he applies on his kitchen cabinet doesn't look the same as the factory job on his refrigerator, even though both products may have carried the same brand name. (It should be noted, however, that if he attempts to brush on the spray-type finish, the appearance of his job would be even worse.)

Fact 2: Only Two Types

FOR the past several years there have been only two types of paint considered desirable as automotive finishes. They are produced in comparable quality by at least six well-known manufacturers. They are (1) the Alkyd or Synthetic resin type, and (2) the nitrocellulose lacquer.

Both of these types are far superior to the old enamel paint by every test of comparison including durability, ease of application and drying qualities. There is a general impression that between the two types, the alkyd resin finishes are more durable than the lacquers. On this point, however, there is some divergence of opinion. One large manufacturer insists that recent surveys have indicated no significant difference whatsoever between the two materials as far as durability is con-

CCJ SURVEY

Postwar Paints

cerned. Another states that because of the higher percentage of solid content per coat, higher initial gloss and better gloss retention, the alkyd resin definitely has less tendency to chalk.

All agree, however, that, as a truck finish, the alkyd resin is superior. Reason for this choice is due mainly to the fact that the alkyd resin can be applied at greater film strength and does not need to be rubbed or polished to obtain acceptable gloss or appearance. Another important reason why alkyd resin is preferred for truck finishing is its greater flexibility to take up the natural contraction and expansion of wooden or even some composition surface.

Lacquers, on the other hand, also have definite advantages. They dry much faster and the danger of dirt pick-up during drying is, therefore, greatly reduced. Lacquers are usually available in a wider color range and their superiority for touch-up is widely recognized. Only the damaged spot need be refinished when lacquer is used, whereas the entire panel must be done over with the alkyd resin type.

For more details concerning the basic formulas of these two products, see Facts 6 and 7.

In the passenger car field the two are at present fairly equally divided both as to desirability and as actually used among manufacturers and refinishers. Favorable characteristics are offset with drawbacks, and the choice becomes a matter of personal like and dislikes or availability. The alkyd resin type is used extensively for over-all *re*-finishing of passenger cars where the expense of a hand-rubbed lacquer finish is not warranted.

The quality of the work is usually improved by baking the alkyd resin or force-drying the lacquer finish, since drying time is greatly reduced and along with it the inherent danger of dirt pick-up. Infra-red drying, incidentally, is often preferred because of its ability to penetrate the film, thereby accelerating oxidation. Unless an alkyd resin finish is specifically formulated for baking, heat should not be applied in excess of 150 deg. F. Lacquers should not be forced-dried at a temperature above 180 deg. F. and for not more than 20 minutes at this temperature.

Fact 3: Nothing Radically New

AGAIN, according to our manufacturing friends, there is nothing radically new, either now or in the predictable future, in the way of commercial finishes. New lacquers for passenger cars with improved durability and unusually rich metallic shades, have been announced re-

(TURN TO NEXT PAGE, PLEASE)

FACTS FOR FLEETS ON PAINTS

(Continued from page 43)

cently but they, admittedly, are not expected to be generally used for trucks; for the same reason that the older type lacquers are not generally used and because most commercial users have no need for the unusual colors available. The good old Alkyd resins are still in there pitching and will be for some time to come. New improvements are contemplated, of course, and will be incorporated in production schedules, but radical changes are definitely not expected soon.

As for the plastic bugaboo, it can be summed up in a few words. If you, like many, are a fanatic on plastics, you may relax in the knowledge that the alkyd resin finishes you have been using during the past several years are plastic. For in the broad usage of the term "plastic," it includes just such properties as the Alkyd resins contain. If, on the other hand, you are conservative with regard to plastics, think of the term as more or less synonymous with molded materials, you are not getting plastic paints and you won't at any time soon. However, you may react, do not allow yourself to be "taken in" by the war-born glamour of the word plastic, which even its producers are now trying to discourage.

By brushing or spraying liquids now on the market, you can rest assured that you will not thereby apply a finish that is in any way comparable to your molded radio case, telephone set, instrument panel or what have you. And even if you did, you would find you had a finish far less durable to outside exposure than either the alkyd resin or lacquer.

Fact 4: Availability Tight

WITH regard to availability, a paradoxical condition exists within the industry. On the one hand raw materials, many of which are derived from either edible or fatty substances, are still extremely critical. On the other hand, at the moment this article was being written manufacturers were actually producing more than ever before in history. The supply of the finished product remains short because of the tremendous backing and may run shorter due to new restrictions, particularly in the edible materials classification.

A breakdown of the basic ingredients with regard to present availability shows that the most of the oils—linseed, soya, chinawood, cottonseed, castor, citicica—are either on the restricted edible list or curtailed by shipping shortages. The primary solvents for lacquers, butyl acetate and butyl alcohol, are produced largely from grain and again run into critical restrictions as food products. In the pigment category, titanium, and lithopene, (the principal favorites) are bottlenecked by short manufacturing facilities. Others, most notably reds and maroons, are extremely critical.

Nothing Radically New

" . . . there is nothing radically new, either now or in the predictable future, in the way of commercial finishes. New lacquers for passenger cars, with improved durability and unusually rich metallic shades, have been announced recently but they, admittedly, are not expected to be generally used for trucks. . . .
"As for the plastic bugaboo, it can be summed up in a few words: The alkyd resin finishes you have been using are 'plastic.' "

Phthalic anhydride and glycerine, principal ingredients of the resin base, are by-products of the coke and soap industry respectively. Obviously, the supply is related directly to the current steel and coal situation on the one hand and the continuing shortages in fats and soaps on the other. Nitrocellulose, backbone of the lacquers, is tied up by an acute shortage of barrels, and an expected shortage of cotton linters and primary solvents.

Fact 5: Refinish Can Be Good

ACCORDING to manufacturers there is no difference between the quality of finishes available for after-market *re*finish use and that available for original factory jobs.

Factory methods, however, often lead to a better job, principally because of three primary factors.

1. The factory job is both physically and chemically clean before the job is started. Starting with all new material, carefully washed with proper solvents, the facory job bats close to 1000 per cent on this most important phase of any painting operation.

2. Factories usually have better baking equipment.

3. Factory finishes are usually applied in an atmosphere of dust-free filtered air. This fact, coupled with the shorter drying period induced through the use of baking equipment, greatly reduces the chance of picking up dust and dirt during drying.

If he can achieve these three factors, however, and sometimes he can and does, there is no reason why the refinisher cannot do as good a job as the factory. The quality of his materials is the same. The refinisher, furthermore, has one important competitive advantage. A few extra minutes are usually not as costly to him in the mass production job. He had a little more time to be careful.

Fact 6: Alkyds from Coke

FOUNDATION of all the alkyd or synthetic resin paints is the substance called Phthalic Anhydride, produced from napthalene which, in turn, is a by-product of coke. Since coke production depends on the coal industry, its availability is anybody's guess at the moment. To this is added glycerine and oil. Together, the three products form the resin from which this type finish gets its name. Glycerine, in turn, is usually secured from fats and, therefore, may be classified as a by-product of the soap industry. Glycerine is also obtainable from cocoanut oil but, as the latter is in the edible category, very little is going the way of the paint manufacturer. The wide variety of oils used in the paint industry are enumerated in Fact 4.

To the basic resin described above,

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Truck Makers Stand Pat on Fleet Discounts

In addition to continuing prewar practice, builders plan better maintenance aid. Dealer discounts still a matter of negotiation

by LEONARD WESTRATE
Commercial Car Journal, Detroit News Editor

BEFORE the war, a discount on quantity purchases of trucks and passenger cars by fleet operators was customary trade practice. In those days, a buyers' market existed and there was intense competition for the business of fleet operators. Today the situation is reversed, with buyers clamoring for new trucks. The manufacturers' biggest problem is how to apportion the limited production among its customers equitably, with least loss of good will.

There has been some thought in truck cricles that, perhaps with manufacturers being able to sell all the trucks they can build, the traditional discount might be abandoned. To find out what actually is happening, COMMERCIAL CAR JOURNAL has made a survey of present discount practices among the manufacturers, on both cars and trucks. And it is quite evident from the answers received from those who cooperated that nearly every company which allowed a factory discount before the war is continuing the practice during the current sellers' market.

Practice Among Dealers Varies

IT SHOULD be remembered that there are two principal sources of discounts. One is the reduction given by the manufacturer and the other is that allowed by the dealer. In some cases only one of these sources applies, in other the purchaser receives discounts from both the company and the dealer. Under present conditions it appears that while factory discounts have remained pretty much altered, the practice among dealers varies widely. In some cases, dealer discounts still are followed; in many others they have been dropped for the present. The manufacturers report that they do not interfere with the dealers on this point, but leave it up to them individually to give the discount or not, as they see fit.

Factory Discounts 3%

SEVERAL of the manufacturers have fleet buyers' agreements which provide for discount payments after a minimum number of vehicles have been purchased. The agreements of the various companies are fairly uniform, differing only in minor respects. They generally call for a discount of 3 per cent, which applies retroactively after the first 20 cars and/or trucks are purchased in the contract period, usually one year. In the case of Ford, this discount is a flat amount on each unit.

The percentage payments usually are calculated on factory list prices, including optional equipment and standard accessories, but excluding charges for transportation, handling, taxes, and special body or equipment. The discount also applies to vehicles purchased for officials and employees of the fleet operator, if the vehicle is used not less than 50 per cent of the annual mileage on company business. In addition, the agreement generally provides a substantial discount on parts, running as high as 25 per cent of list.

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FORM 235 WHSE. S.

WEEKLY GAS AND OIL REPORT

PLANT — Week Ending Saturday — 19

Cost of Gas Per Gallon	Cost of Oil Per Quart

TRUCK Co. No.	SUNDAY G	SUNDAY O	MONDAY G	MONDAY O	TUESDAY G	TUESDAY O	WEDNES G	WEDNES O	THURSDAY G	THURSDAY O	FRIDAY G	FRIDAY O	SATURDAY G	SATURDAY O	Total GALS. GAS	Total Quarts Oil	Lbs. Grease	SPEEDOMETER READINGS OUT	SPEEDOMETER READINGS IN	MILEAGE

①

Fig. 1. Weekly Gas and Oil Report is prepared by each branch garage. Pump total on back, less evaporation, must equal amount used. Size. 8½ x 11 in.

Four Forms Flag High Fleet Costs

Weekly gas-oil report and a shop charge sheet supply data for a two-part master truck cost report which breaks down all costs to show where they are out of line

by C. V. BROWNLEE and JAMES HAMPTON

Secretary — Fleet Superintendent

Atlanta Laundries, Inc., Atlanta, Ga.

THE Atlanta Laundries fleet is a consolidation of seven laundries, a cold storage plant and a rug cleaning plant; each retaining the identity of its own trucks but operating under supervision of the parent company. Today the system operates approximately 200 trucks, all standard ½-ton panel jobs of three different makes. Each fleet has its own shop, does its own preventive maintenance; but supervision, major overhaul, careful lubrication, and all accounting is handled by the central garage and office.

In 1941, the total cost of operation of our fleet, which then numbered 280 standard ½-ton panel trucks—excluding insurance and routemen's commissions but including depreciation, taxes and other fixed charges—amounted to $114,272.20 or 4.988 per cent of net sales.

The next year our fleet costs, with only four less trucks in operation, amounted to $9,245.30 or only 3.787 per cent of our net sales. That was a direct saving of 14.02 per cent, despite the fact that prices of parts and equipment were already on the way up.

In 1943, with prices skyrocketing, very inferior gasoline and our fleet reduced to 243 vehicles, we lopped off another 11.75 per cent to a figure of $85,821.49 or 3.632 per cent of net sales. (Admittedly this latter figure was influenced by the reduction in trucks.)

Cost per mile in 1939 was $.036; in 1940, $.035; in 1941, $.0318; in 1942, $.0320; and in 1943, $.0373.

In 1939, we made an average of 11.06 miles per gallon; in 1940, 11.44; in 1941, 11.53; in 1942, 12.01; then, in 1943, slipped to 10.58.

The higher figures in 1943 again

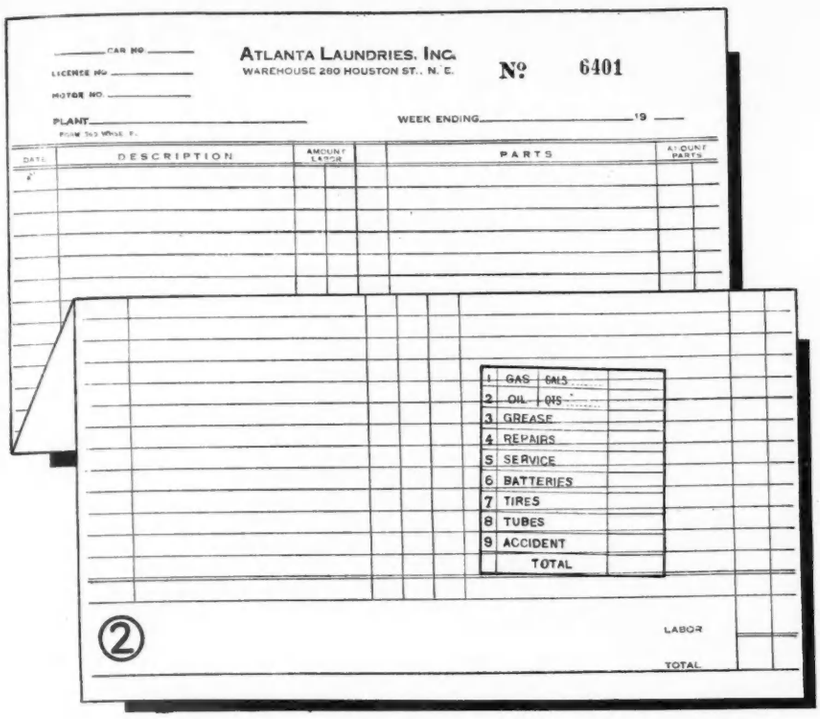
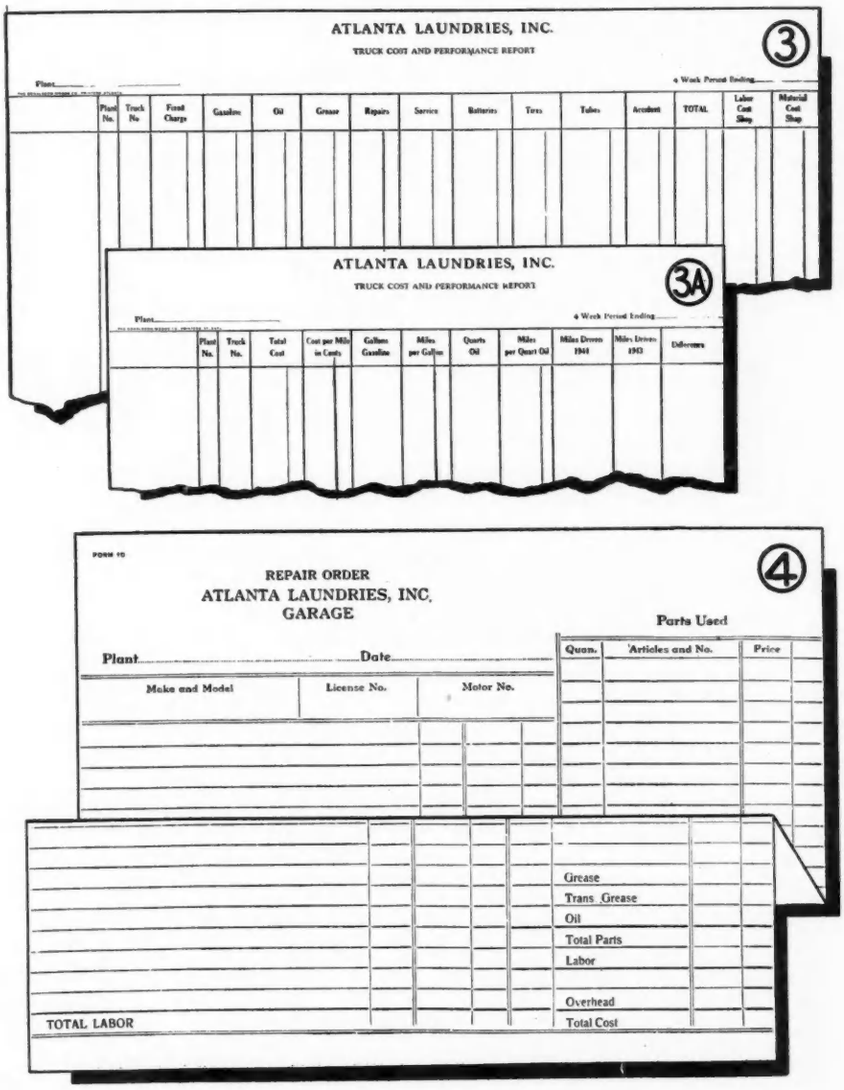


Fig. 2. Garage Shop Charge, prepared for each vehicle by central shop, reflects all operating costs. Coded information at bottom is used in compiling final records. Size. 8½ x 11 in.

Fig. 3 & 3A. Truck Cost and Performance Reports, using information furnished by Figs. 1 & 2, are compiled on business machines. These are central office records for entire fleet. Sizes. Part 1, 16½ x 14 in. Part 2, 13 x 14 in.

Fig. 4. Repair Order is standard form prepared by each garage for each job. It is forwarded to central shop for compilation of Garage Shop Charge shown in Fig. 2. Size: 9 x 9½ in.



obviously reflected higher expenses and particularly the poorer grade gasoline available. The point we want to bring out is that we are able to quote these figures with the accuracy indicated (*to know where we stand*), as a direct result of the very complete cost accounting plan we put in operation in 1939. In addition, and even more importantly, we attribute a very large part of the savings indicated to the fact-finding information the accounting plan brought to light. To cite but a single advantage, our fleet is broken down into seven separate units, each doing their own preventive maintenance. At the end of each month, we are able to compare accurately the cost of these operations, and to spot quickly the weakest points.

During 1944 and 1945, we were forced to suspend the detailed phases of our accounting plan, due to the acute shortages of both personnel and equipment. But effective Jan. 1, 1946, it has been reinstated in full and on a permanent basis.

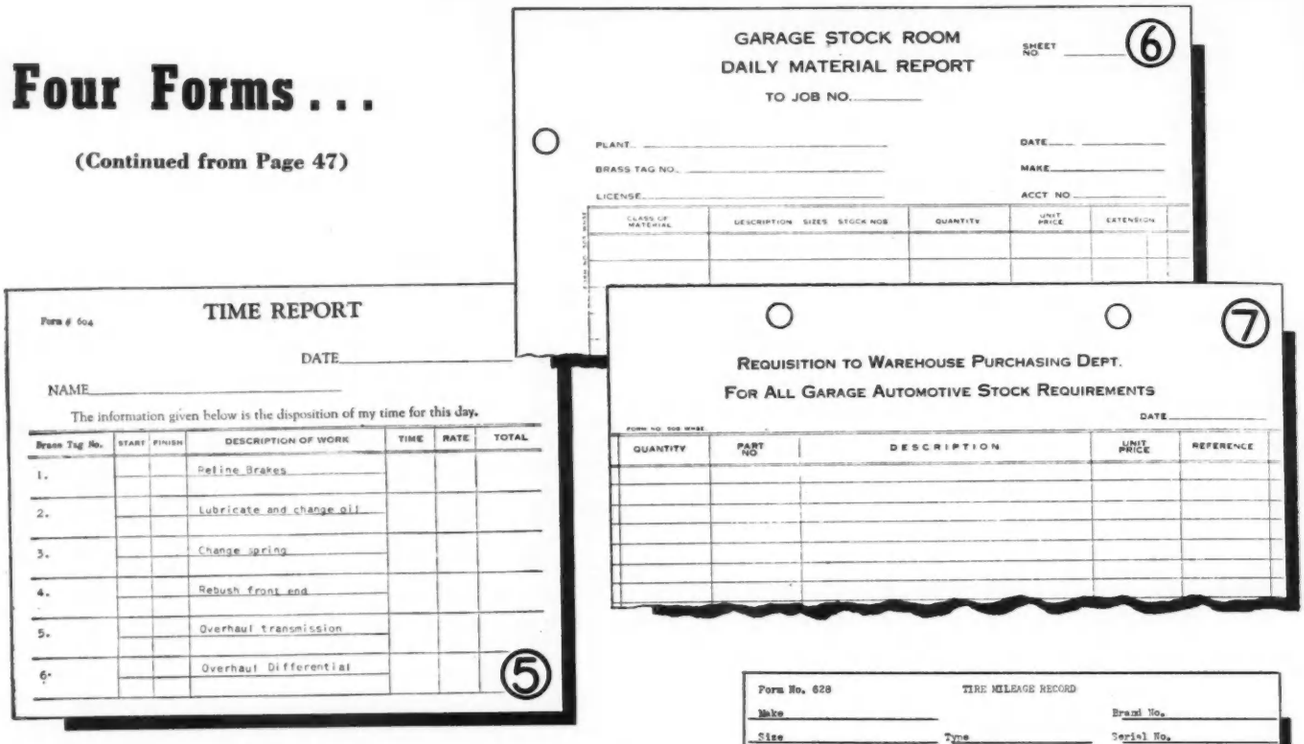
Accounting to Hold Costs

FROM wartime regulations and enforced economics we learned many lessons, and now that we are back on our own again, we look to

(TURN TO NEXT PAGE, PLEASE)

Four Forms . . .

(Continued from Page 47)



GARAGE STOCK ROOM
DAILY MATERIAL REPORT
SHEET NO. ⑥
TO JOB NO.
PLANT
DATE
BRASS TAG NO.
MAKE
LICENSE
ACCT NO.
CLASS OF MATERIAL | DESCRIPTION SIZES STOCK NOS | QUANTITY | UNIT PRICE | EXTENSION

Form # 604
TIME REPORT
DATE
NAME
The information given below is the disposition of my time for this day.

Brass Tag No.	START	FINISH	DESCRIPTION OF WORK	TIME	RATE	TOTAL
1.			Reline Brakes			
2.			Lubricate and change oil			
3.			Change spring			
4.			Rebush front end			
5.			Overhaul transmission			
6.			Overhaul Differential			

⑤

⑦
REQUISITION TO WAREHOUSE PURCHASING DEPT.
FOR ALL GARAGE AUTOMOTIVE STOCK REQUIREMENTS
DATE
QUANTITY | PART NO. | DESCRIPTION | UNIT PRICE | REFERENCE

Fig. 5. Daily Time Report is prepared by each mechanic, provides source of information for spot checks of labor charges or recurring jobs. Size 6½ x 5½ in.

Fig. 6. Stock Room Daily Report provides record of material charged to each vehicle. Size: 8½ x 11 in.

Fig. 7. Requisition to Warehouse Purchasing Dept. is used for replenishing stockroom. Size: 8½ x 11 in.

Form No. 628 TIRE MILEAGE RECORD
Make
Brand No.
Size
Type
Serial No.
Cost
Invoice Date

Brass Tag No.	Wheel Position	Date On	Date Off	Odometer On	Odometer Off	Mileage

⑧

Cause of Removal and Disposition | Date of Repair | Cost of Repair

TOTAL MILEAGE
COST PER MILE
CAUSE OF PERMANENT REMOVAL FROM SERVICE,

8A

Figs. 8 and 8A. Opposite sides of convertical tire mileage record. Size: 6 x 4 in.

Fig. 9. Inventory card used by stockroom for each parts class. Size: 7 x 4 in.

CARD NO.
ATLANTA LAUNDRIES INC.
HOW PACKED
COST PER
MAX.
MIN.
ANNUAL USE
ORDERED
DATE | ORDER NO. | QUAN. | PRICE | VENDOR
RECEIVED
DATE | QUAN. | INV. COST | FREIGHT | TOTAL COST | UNIT COST
DATE | P. NO. | QUAN. | BAL. | DATE | P. NO. | QUAN. | BAL. | DATE | P. NO. | QUAN. | BAL. | DATE | P. NO. | QUAN. | BAL.

⑨

cost accounting to hold us on the line!

Describing this plan from scratch may make it sound quite complicated. Actually, in working reality, it is not at all complicated. Readers will just have to take our word for that. We pass it along in the hope it may be beneficial, particularly to private operators like ourselves who too often shy away from the real truth about their trucking costs. Here is how it works:

The key to the whole accounting system lies in four forms; namely the Weekly Gas and Oil Report (Fig. 1), the Garage Shop Charge (Fig. 2), and the two sections of the master Truck Cost and Performance Report (Figs. 3 and 3A).

The self-explanatory Weekly Gas and Oil Report (Fig. 1) is posted by each of the several garages in the system from information furnished by a gasoline and oil disbursement book issue for each vehicle. At the end of each week, the report is to-

(TURN TO PAGE 142, PLEASE)

LAUGH IT OFF

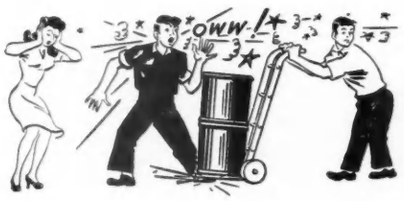
The shop foreman meekly spoke to the lingerie clerk: "I want a brassiere for the old battle axe."

Clerk: "What type, please?"

Foreman: "Why, do they come in types?"

Clerk: "Oh, yes, we have three different kinds—the Gestapo for the masses, the Salvation Army for the fallen, and the O.P.A. for making mountains out of mole hills."

C C J



An old maid OS&D Clerk making an inspection of a damaged shipment on the warehouse platform, was shocked at the language of two freight handlers stowing drums nearby. Complaining to the dock foreman, she recommended that the men be reprimanded. The foreman promised to look into the matter and called one of the men aside.

"What's this business about swearing?"

"Why, boss," replied the freight handler, "it's nothing at all. Me and Butch were unloading those fifty gallon drums of paint, and I accidentally let my hand truck down too quickly and caught his toe under a drum. And Butch looked at me and said, "Now, really, Joseph, in the future you must handle that vehicle with more caution."

C C J

Mable: "Gosh, did we throw a party last night!"

Kate: "Who was there?"

Mable: "Just my boy friend and me."

C C J

Inez the Interline Clerk: "Are you making any headway with that navy veteran you snagged last week?"

Ocie the Operator: "I was getting real fond of him until he got fresh and spoiled it."

Inez: "Isn't it terrible how fast a man can undo everything?"

SUSIE COMES UP WITH THIS GEM: "MODESTY HAS RUINED MORE KIDNEYS THAN BAD LIQUOR!"

C C J

Doctor: "Have you lead a normal life?"

Fleet Operator: "Yes, sir."

Dr.: "Then if you want to get well, you'll have to give up women and liquor for a few months."

C C J

Maintenance Superintendent: "Gosh, that sure is some shiner you are wearing! What happened? Run into a door?"

Shop Foreman: "No, I got this black eye as a result of taking your advice. Do you remember telling me that I would never get anywhere with my girl friend unless I conquered my shyness and took things into my own hands? Well you forgot to tell me what things!"

C C J

SAFETY SADIE: "I HEARD THAT NEW FILE CLERK SINGING DURING THE LUNCH HOUR. SHE HAS A GOOD CONTRALTO VOICE AND A VERY LARGE REPERTOIRE."

CATTY CORA: "YES,AND HER DRESS ONLY MAKES IT LOOK LARGER, TOO."

The wife of one of the terminal employees posed in front of a building which was being razed. "Don't get my car in the picture," said she, "or my husband will think I ran into the place."

C C J

Girl caller: "I want to see the terminal manager."

Secretary: "Sorry, but he's in conference with his assistants."

Girl caller: "That's allright. I know a good story, and I'm a lot of fun!"

C C J

Office Boy: "Please, sir, I think you are wanted on the phone."

Terminal Manager: "What do you mean, you think? Aren't you sure?"

O. B.: "Well, the voice said: 'Hello, is that you, you old b————?' "

C C J

A FELLOW GAVE HIS GIRL A FANCY PAIR OF GARTERS. SHE GAVE THEM TO HER MOTHER, SO NOW HE NEVER EXPECTS TO SEE THEM AGAIN.

C C J

1st Driver: "What's the difference between amnesia and magnesia?"

2nd Driver: "Give up. What's the difference?"

1st Driver: "The fellow with amnesia doesn't know where he's going."

C C J

Two elderly fleet operators were sitting comfortable in their easy chairs at the Elk's Club enjoying an after dinner cigar. Said one to the other:

"Every time I come here my wife thinks I'm out chasing women . . . Gad, I wish she was right!"

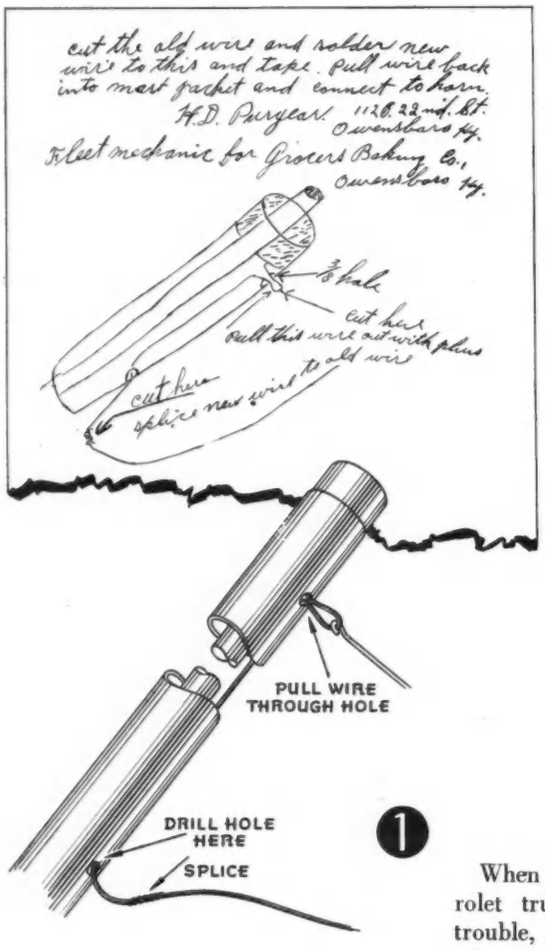
C C J

Motorist: "I wasn't traveling 60 miles an hour. I was almost standing still when he arrested me."

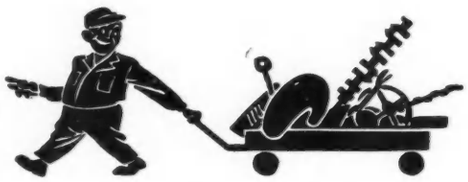
Judge: "Are you sure you weren't backing into something?"

Resume Work

SHOP and SALVAGE HINTS



$5 Commercial Car Journal will pay $5 for acceptable shop hints and $5 for parts salvage tips. A snapshot or a rough drawing with a simple explanation is all that is needed. CCJ will polish them for publication. Send one in today! Shown at left is a typical contribution—just a rough sketch and a brief statement of the problem and its solution. See how it looks in Fig. 1. This brought Mr. Puryear $5. There are other $5 bills waiting for your contributions. Don't underestimate your ideas. Let the editor judge.



1. Horn Wire Installation

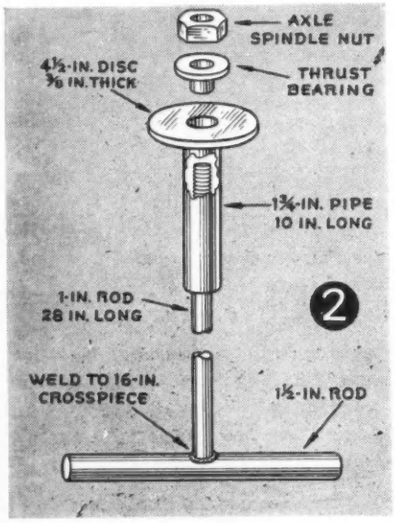
by H. D. Puryear
Grocers Baking Co., Owensboro, Ky.

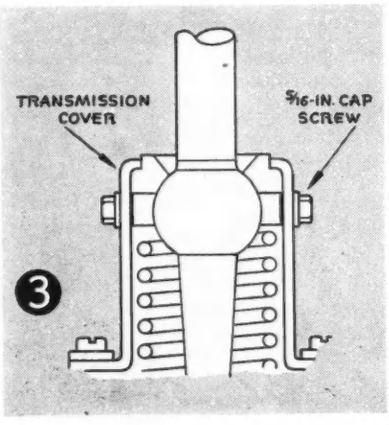
When the horn wire on our Chevrolet trucks shorts out and gives trouble, I install a new wire in a few minutes in the following way.

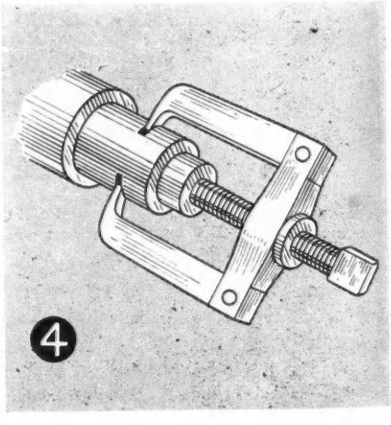
I cut off the old wire a few inches from where it comes out the bottom of the mast jacket and splice the new wire to it. Then I drill a 3/8-in. hole in the mast jacket about 3 in. from the steering wheel. With a hook bent from a piece of small wire I fish the old wire out through this hole and pull the whole thing (old wire with the new one) up through this hole.

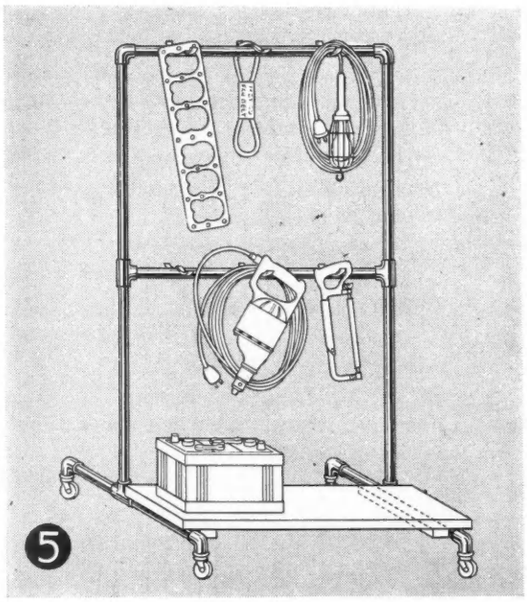
Then I solder the new wire to the piece from the horn button and slip it back into the jacket as it was.

This procedure is much quicker than dismantling the horn assembly, and the job is just as good as new.









2. Home-Made Sleeve Press

by Claire E. Ellsworth
Ellsworth Sales Co., Eagle Grove, Iowa

Here is a tool I made from scrap material to install dry sleeve cylinder liners in International engines. It requires very little time to make and has the power to press tight leeves in quickly. With this tool it is unnecessary to remove the oil manifold pipe to get at No. 4 and 5 cylinders.

The accompanying drawing shows most of the design details. The main shaft is a steel rod 28 in. long threaded down 9½ in. This piece is welded to a 1¾-in. pipe or rod 16 in. long. The top piece is a 4½-in. disc welded to a 1¾-in. pipe which is 10 in. long. The center is drilled so that this piece slips over the threaded end of the rod. Next a cylinder with a 1 5/16-in. outside diameter and a 1⅛-in. inside diameter is pressed into an axle spindle thrust bearing. Then a 1-in. 8-thread nut is turned down on the rod.

To use the tool, first position the liner and start it into the cylinder. Then slip the rod up through the bottom of cylinder and position so that the cross bar rests across the engine base. Install the disc over the top of the sleeve with the pipe following the rod. Slip the thrust bearing over the face of the disc and thread the nut on the rod.

This tool can be made so that the main shaft threads into the cross shaft. This can be done by welding a 1-in. nut to the cross piece and threading the rod. A tool of this sort will be more convenient to use.

3. Transmission Shift Tip

by George Graves
Meyer's Bakery, Little Rock, Ark.

We have had trouble with the pins in the top of the transmission cover in our 1½-ton Chevrolet trucks. These pins which keep the lever in position wear out and also wear the holes oblong.

We now drill the holes in the transmission cover to ¼ in. and tap to fit a 5/16-in. cap screw. This screw which is about ¾ in. long fits in the groove of the ball and does as good a job as the original pins. Then when wear occurs, we simply install a new cap screw.

We think that this change is much more simple and inexpensive than installing a new cover.

4. Bearing Sleeve Removal

by Fred Johnigk
Keystone Steel & Wire Co., Peoria, Ill.

To take an inner sleeve from a Hyatt or needle bearing is sometimes a very difficult job, especially on the man transmission shaft.

I remove them by grinding notches in opposite sides of the bearing to fit the fingers of a puller. Any grinder with a flexible shaft will do the job The puller does the job in a matter of minutes.

5. Parts, Tool Stand

by Dave Heinkle
Philadelphia, Pa.

Here is a handy portable parts and mechanic's tool stand which can be used in many shops that do not have portable work benches. I find that one can hang all necessary equipment for the job on this stand, and he never has to return to the work bench or shop for a forgotten article.

The mechanic will probably want to make this stand to suit his own needs, but my stand has the following specifications: Material, ¾-in. water pipe. Uprights are 30 in. long; crossbars are 48 in. long; leg pieces are 12 in. long. Six elbows and four tees are needed. The hooks can be made from ¼-in. strap iron, 1 in. wide and 8 in. long. These pieces are welded or bolted to the crosspieces in the manner shown. The board laid across the legs fits in with crosspieces, or it can be bolted to the pipe. The tool box will fit nicely on this shelf.

SOLVING Propeller Shaft

IT IS very difficult to put a finger on drive line trouble. The propeller shaft that is out-of-balance or out-of-alignment—unless considerably so—looks and feels just like the perfect article. But not so with *transmission* and *differential gears*. Here, abnormal conditions are quickly spotted upon opening up the cases. Any attempt to spot propeller shaft trouble by the sound of the disturbance is usually doomed to failure. There are very few mechanics who can determine by sound whether the trouble is in the transmission, the differential, or in the propeller shafts. The reason for this is that the rumbling sound so often accompanying an unbalanced propeller shaft is almost indistinguishable from the sound that results from transmission and differential gear disturbances.

Because drive line disturbances are the most difficult to find, they are usually the last possibility to be tried.

★ ★ ★ ★ ★ ★ ★

Importance of Correct Alignment

Correct alignment of the universal joints is imperative to efficient torque transmission at high speeds. As an aid to obtaining the parallel alignment so necessary, manufacturers stamp arrows on the shaft end and on the slip yoke. These arrows must be lined up exactly—one spline off can cause a truck-load of trouble. Note in the illustration (Fig. 1) how the requirements of correct alignment are met when the arrows are lined up.

1. **The vertical faces of the flanges are parallel.**
2. **The longitudinal centerlines of the flanges are parallel.**

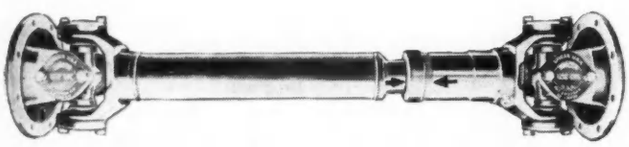


Fig. 1. Arrows on the shaft end and on the slip yoke must line up exactly to insure parallel alignment of the joints.

★ ★ ★ ★ ★ ★ ★

* Data courtesy The Timken-Detroit Axle Co.

It is a fact that, in many instances, disturbances attributed to differential and transmission gears are actually of propeller shaft origin. Correct installation, disassembly and assembly of propeller shaft in *proper alignment* is the key to most propeller shaft problems.

Therefore the following instructions are worthy of your closest study—they can save you a great deal of trouble.

Removing a Propeller Shaft

REMOVING a propeller shaft is a relatively easy matter as most propeller shafts are of the spline slip-joint type. Most truck manufacturers print maintenance manuals with clear, illustrated instructions on how to do this. However, several important precautions are worthy of mention here.

First, make sure that the male and female members of the slip joint are marked so that they can be reassembled in their original position with the yokes of the universal joints in the same plane to prevent shaft vibration. If the manufacturer's arrow marks are not discernible, mark your arrows before disassembly—and match them up upon reassembly.

After the *first step* of disconnecting the companion flange at the transmission and sliding the joint on its splines to clear the flange and pinion and nut, you are ready for *step two*, which brings up the second very important precaution.

In lowering the transmission end of the propeller shaft, by all means, *do not drop the shaft* as this strain can easily cause misalignment of the shaft and injury to the pinion bearings at the rear end of the propeller shaft.

Step three in removing the propeller shaft is disassembling the universal joints. This is a slightly different operation on each make of propeller shaft and is completely covered in truck maintenance manuals.

Withdrawing the shaft from under the vehicle is the *fourth* and last step.

Things to Watch for When Re-Installing Propeller Shaft

PROBABLY no greater mistake can be made in replacing a propeller shaft on a vehicle than to fail to install a new shaft of exactly the proper length.

1. If the new shaft is too long, serious trouble can result from the drive shaft male-spline end bottoming in the female end. If bottoming of the shaft is light, brinelling of the pinion bearings results. If the shaft is heavily bottomed, the drive shaft may actually collapse, resulting in damage to the vehicle.

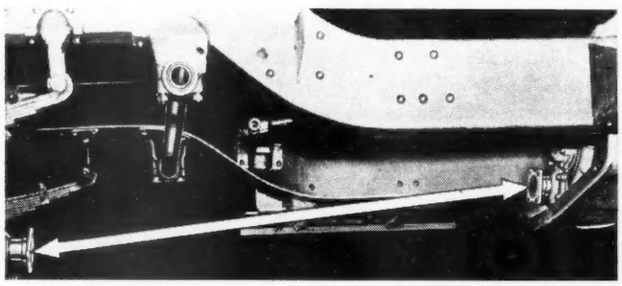
Problems*

Noises often attributed to differential and transmission gears actually may be of propeller shaft origin. Correct installation, disassembly and assembly are the key to most propeller shaft problems

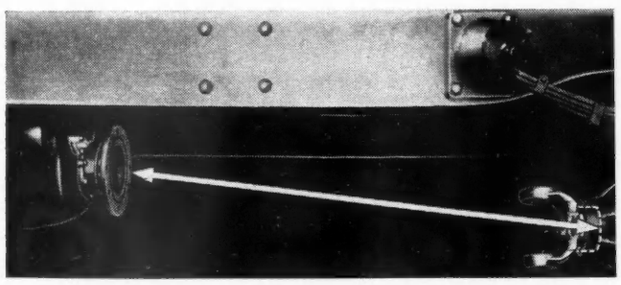
2. Too short a propeller shaft can get you into even greater trouble. Fantastic as it may seem, too short a propeller shaft can actually overturn a vehicle—and many such cases have been reported. It happens this way: Shortness of the shaft causes separation at the slip joint and, when the shaft gets caught under the vehicle just right, it literally pole-vaults the vehicle onto its top or side.

Obviously, the way to circumvent these troubles is to make certain of the correct propeller shaft length. There are several ways to do this:

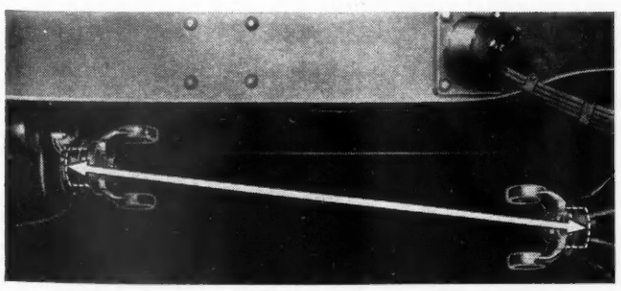
The first way is *measure it.* Here's how:



1. If *flange yokes* are on both ends of the assembly, measure the distance *between* the two companion flanges.

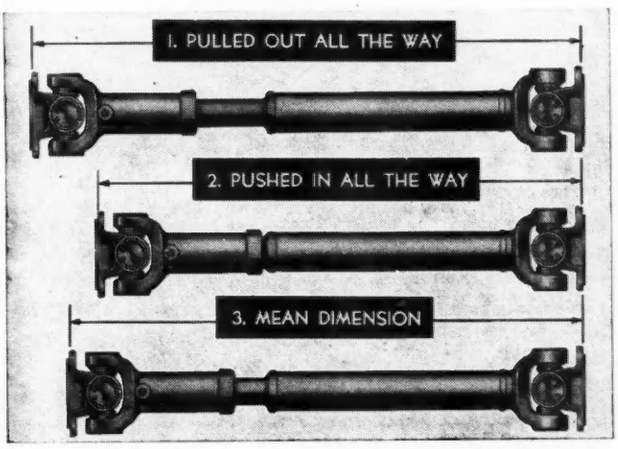


2. If *flange yoke and end yoke* are used, measure from the companion flange face to the back face of the *end yoke* hub.



3. If *end yokes* are used on both ends, measure from end to end of the end yoke hubs.

If for any reason these measurements can't be taken on the truck, there is still a simple way to insure the correct shaft length. Here's how:



1. Measure the over-all length of the old assembly when it is pulled *out* all the way.

2. Measure the over-all length when it is pushed *in* all the way.

3. One-half the distance between the two lengths—or the *mean dimension*—is the correct space to be filled.

Proper lubrication is an important part in the re-installing operation. Be sure to work a small quantity of chassis grease into the roller assemblies and make certain that the slip joint splines are also lubricated with chassis grease. No other lubrication is required during re-assembly.

Count the Cork Gaskets

ONE common mistake in re-installing propeller shafts that can get you into much trouble is carelessness in counting out and placing cork gaskets on the journal retainers. (Fig. 2). Every manufacturers advises installing one new cork gasket on the four retainers upon re-installation. Make certain that you get just one cork gasket

(TURN TO NEXT PAGE, PLEASE)

Propeller Shaft Problems

(Continued From Page 53)

on each of the four retainers. Just one cork gasket too many on one of these retainers is enough to throw the whole propeller shaft out of balance and cause endless trouble because of the difficulty in tracing the source of this out-of-balance.

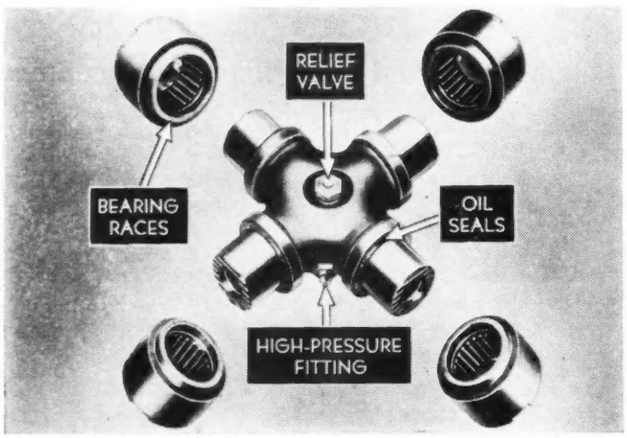


Fig. 2. When re-installing propeller shafts, one new cork gasket oil seal should be placed on each of the trunnion shoulders ahead of the needle bearings.

Tight Flange or Yoke Mounting

The least degree of looseness in the flange nut or yoke nut of the pinion shaft is enough to cause excessive out-of-balance at high engine speeds. But more important is the fact that in many cases where the flange or yoke nut also maintains the adjustment on the pinion bearings, this *adjustment is destroyed* because of lack of torque on the nut.

When this flange nut or yoke nut is not drawn up tight, the *correct bearing adjustment and gear tooth contact is destroyed*. This results in premature damage to the gearing (Fig. 3).

Torque requirements as specified by the manufacturer should be *followed exactly* in tightening the flange nut or yoke nut.

★ ★ ★ ★ ★ ★ ★

Checks on Howling Noises

When howling noises signify trouble somewhere in the transmission, drive line, or rear axle, make these two simple checks at the drive line first:

1. Check the flanges of the universal joints for proper alignment.

2. Check the tightness of the flange nut or yoke nut at the rear axle pinion.

In this way you will save yourself a great deal of time and trouble and often the necessity of opening up the transmission or differential cases—and you will solve the mystery of a great proportion of propeller shaft troubles.

★ ★ ★ ★ ★ ★ ★

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A Warning

On new vehicles, truck manufacturers balance all component driving or rotating members to a specified range of RPM commensurate with the operator's hauling needs. Now, if an operator—by removing the governor on the vehicle, or by adding an overdrive transmission—increases the RPM of the propeller shaft above the range for which it was originally dynamically balanced, he is in for propeller shaft out-of-balance trouble. Truck or bus mechanisms should not exceed the manufacturer's maximum recommended RPM.

★ ★ ★ ★ ★ ★ ★

Keyways on Tapered Pinion Shafts

Two important precautions should be followed when installing keys in the keyways on tapered-pinion shafts.

1. Make certain that the new key is the proper length. It should not be any longer than the flat or root section of the keyway.

2. Make certain that the key is not driven beyond the flat or root section as it will prevent the flange or yoke from seating properly, resulting in looseness and runout.

Fig. 4 illustrates what happens when the key is either *too long or is driven into* the runout of the keyway, forcing the pinion flange out of alignment on the taper. The result is that proper tightness cannot be obtained and eventually the key will be sheared or keyway will be damaged as illustrated.

Fig. 3, left. Loose flange or yoke nut on the pinion shaft will cause improper adjustment, bad tooth contact, may finally result in complete fracture like this.

Fig. 4, right. Twisted keyway! Caused by loose flange and poor contact on the taper, the result of key being driven beyond the flat or roof section of the keyway.

Tire Code Speeds Road Service Calls

Number painted on tire quickly identifies correct tire and wheel needed for changes

by M. E. GALL
Sterrett Operating Service
Baltimore, Md.

THE problem of selecting the right tire and wheel to answer a hurried call for road service was a confusing issue with us until we worked out the simple plan described herewith for coding our spare tire and wheel assemblies.

We have approximately 140 trucks in the fleet, most of which are leased on an annual basis to 25 different operators who furnish their own drivers. These trucks all run within the city limits, but carry no spare tires. We service all road calls, including tire troubles, from our centrally located garage.

18 Different Combinations

DESPITE the fact that most of our vehicles are of a single make, their sizes vary widely. There are a number of different tire sizes, and the wheels vary by types as well as size. When we added them up we found we had exactly 18 different combinations of tire and wheel assemblies.

To facilitate selection of the right combination and also to reduce the number of mounted tires needed in our stock room, we arbitrarily selected a number for each of these 18 different combinations as shown in the following table:

Master Schedule Spare Tire Numbers

CODE NUMBER	SIZE	MAKE
1	6.00x16	GMC
2	7.00x15	GMC
3	7.50x16	GMC
4	6.50x20	5 hole GMC
5	32x6–8	5 hole GMC
6	32x6–10	5 hole GMC
7	32x6–10	6 hole GMC
8	7.50–20	5 hole GMC
9	34x7	6 hole GMC
10	8.25x20	5 hole GMC
11	8.25x20	6 hole GMC
12	9.00x20	6 hole GMC
13	6.00x16	Dodge
14	7.50x16	Dodge
15	32x6–10	Chevrolet
16	32x6–10	Budd
17	8.25x20	Budd
18	7.50x17	GMC

We painted each mounted tire in the stockroom with the proper code number with the aid of a simple stencil and aluminum paint. Then we drew up a master schedule showing the specification of tire and wheel for each number. Next, we made a list of our fleet showing each truck by customer's name and number, placing opposite the vehicle identification the new code number for standard front and rear tire and wheel assemblies. In addition, we made two extra columns showing what alternate size, if any, might be temporarily substituted to bring the truck in, should the right size be out of stock.

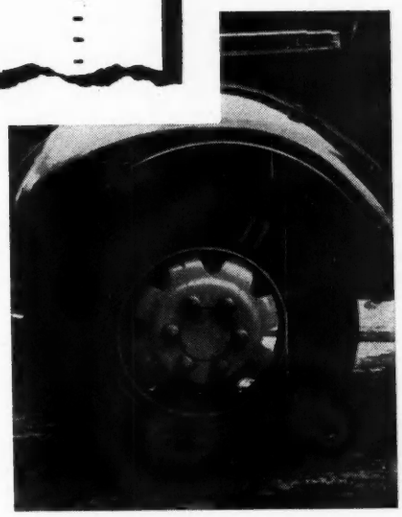
Now, when a driver calls in for tire service, we have only to check his truck number against the list to see what tire assembly is needed. A glance at the portion of the master chart, top of this page, shows how the plan works out. Say the driver in trouble has customer A's truck No. 51. The chart shows that he needs a number 4 on the front; a number 5 on the rear. It also shows that if no number 4 is in stock, we can get by with a number 5 or even 6 for the front; and a number 6 for the rear. (In this particular case the wheels are all the same, the tires are slightly different sizes.)

If, however, the driver had customer A's No. 57, the chart shows at a glance that we can use a 6 or a 5 on the front, but that we have to have a 5 for the rear, no alternate being available.

Gradually, all tires in the fleet are being coded in this manner. If the tire causing trouble already has a code number on it, it makes service even faster, for the driver is instructed to call the number in along with other required data. If this size is not available, however, it will be still necessary to consult the vehicle chart, because code alternates are not always the same or, in some cases, no alternate will work.

CUSTOMER	TIRE NUMBER FRONT	TIRE NUMBER REAR	TIRE NUMBER ALTERNATE FRONT	TIRE NUMBER ALTERNATE REAR
A 51	4	5	5-6	6
A 54	4	5	5-6	6
A 55	4	5	5-6	6
A 56	6	6	5	-
A 57	6	6	5	-
A 58	6	6	5	-
B 1	4	6	5	-
C 1	6	6	5	-
C 2	6	6	5	-

Top: Section of Sterret's master chart showing regular and alternate codes for front and rear tire-wheel combinations



Right: Typical aluminum numeral painted on side of tire. This one indicates an 8.25 x 20 tire on 6-hole GMC wheel

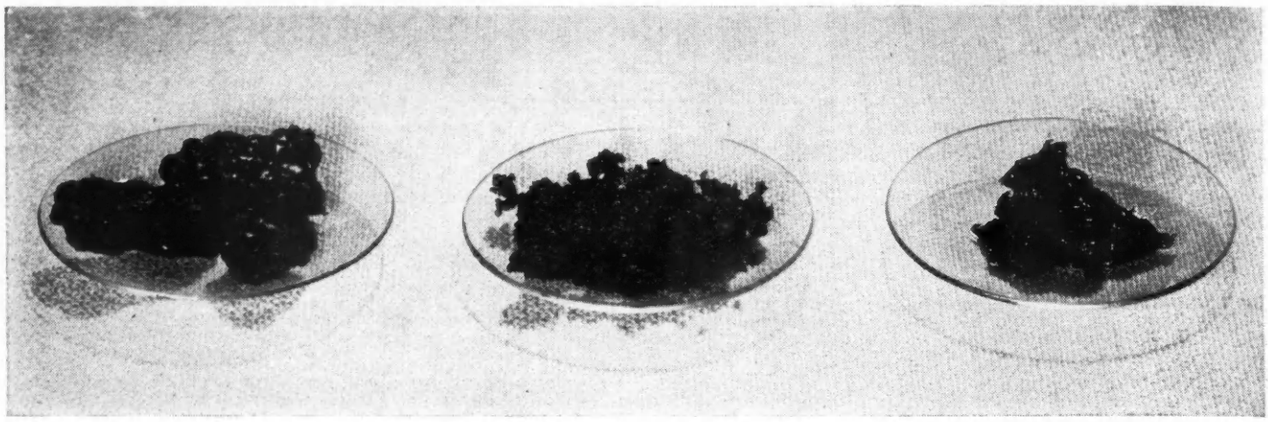


Fig. 1. Samples of the three types of sludge found in engines. Left. Hard, lumpy sludge of a coke-like nature. Center. Grainy sludge, frequently called "coffee grounds." Right. Soft, pasty sludge. All are chemically similar

8 Ways to Slap Down Sludge

Analysis shows prime cause is oil contamination with combustion chamber blow-by products, which leads to solutions that fleet shops can employ

Carl Georgi

WHEN sludge deposits are found in an engine, the first reaction almost invariably seems to be, "That oil must be no good, look at all the sludge it made!" The oil marketer then has a dissatisfied customer on his hands and must rise to the defense of his oil. The oil man may then discourse at length on the quality and stability of his oil and may even launch into a discussion of additives and detergency, and the many other phases of modern oil technology. However, most of this technical eloquence usually sounds like so much "apple sauce" to the fellow who owns the sludged engine, and he usually remains convinced that oil is the cause of all sludge and he suspects arguments to the contrary are just so many alibies.

Mechanics, servicemen and fleet operators cannot be blamed for this state of affairs, since they are not lubricant experts and cannot be expected to know all the whys and wherefores of engine sludge deposits. It would seem, however, that the oil industry is at fault to a considerable extent, since oil marketers have apparently been most reticent in publicizing the fact there are several causes of engine sludge deposits and that oil alone is not a cure-all. As one automotive engineer stated, oil marketers seem to be too much inclined to emphasize the merits of their respective products and have avoided admitting the fact that oil, no matter how good, cannot do everything.

What Is Sludge?

IN CONSIDERING the problem of engine sludge deposits, perhaps the first question to be answered is, "What is sludge?" Fig. 1 illustrates the three types of sludge found in engines:

1. Hard lumpy sludge of a coke-like nature.
2. Grainy sludge, frequently called "coffee grounds."
3. Soft, pasty sludge.

With very few exceptions, sludges found in engines can be classified under one of these three types. Table 1 shows typical analysis of the three varieties of sludge.

TABLE I—TYPICAL ANALYSIS OF ENGINE SLUDGE SAMPLES

	Hard	Grainy	Pasty
Oil	36.%	45.%	50.%
Water	1.%	4.%	8.%
Soot & Carbon	26.%	23.%	21.%
Lead as Bromide	21.%	15.%	10.%
"Resins"	14.%	11.%	10.%
Iron, Silica, etc.	2.%	2.%	1.%

Analysis of many sludge samples over a period of years, and from a wide variety of engines in all kinds of service, has revealed a remarkable similarity in composition, and the data in Table 1 can truthfully be

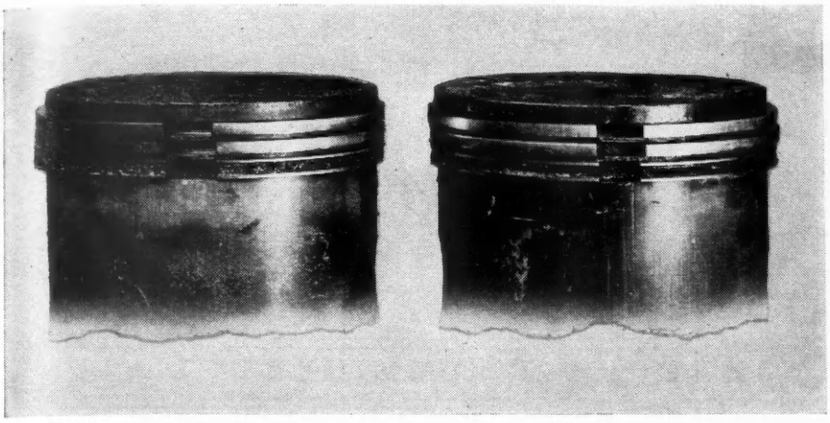


Fig. 2. Two pistons taken from the same engine which happened to have different types of oil rings. After 20,000 miles in light service, rings at left, although dirty, functioned satisfactorily. The others were completely plugged

by CARL GEORGI
Technical Director, Research Laboratories,
Quaker State Oil Refining Corp.

POINTERS ON PREVENTION OF SLUDGE DEPOSITS

Since the prime cause of engine sludge deposits is oil contamination, and since contamination results from low jacket and crankcase temperatures, it is easy to prescribe remedies for preventing sludge. All that is necessary is to make the engine run warmer. Unfortunately, however, putting these remedies into practice is not such an easy matter.

It is generally recognized that jacket coolant temperatures of 140 deg. F. minimum are necessary to minimize condensation of combustion gases on cylinder walls and subsequent oil contamination. Similarly, oil temperatures of 140 deg. F. minimum are needed to allow purging from the crankcase the volatile contaminants which do accumulate. As a matter of fact, coolant and oil temperatures considerably above 140 deg. F. are more desirable and in the range from 160 deg. to 200 deg. F.

When any given engine or engines are in sludge trouble, the required remedies can be listed as:

1. **Install high-set thermostats to keep coolant hot as possible.**
2. **Install radiator shutters or cover the lower part of the radiator to provide less cooling and warmer return coolant to the cylinder block.**
3. **Install covers on hood louvres to keep the engine compartment warmer.**
4. **Install a shield to deflect air blast from the crankpan, or insulate crankpan—to develop higher oil temperatures.**
5. **Insulate valve gallery, push rod or rocker-arm compartment covers, if sludge accumulations are found at any of these points. (Proprietary insulating compounds which can be applied in plastic form and which dry to hard, adherent insulating coatings are now available for engine insulation.)**
6. **Inspect engine ventilating system at frequent intervals and keep intake and outlet clean and free of restrictions. If a ventilating system is functioning effectively, deposits of dirt and fuel "resins" may build up quite rapidly at the outlet tubes or caps, causing a reduction in efficiency. If the engine ventilating system is not effective, installation of an auxiliary ventilator capable of circulating from 3 to 5 or more cubic feet of air per minute through the crankcase at low vehicle speeds may be desirable.**
7. **Establish an oil draining schedule which will allow removal of the oil before contamination builds up to sludge forming concentrations.**
8. **Check ignition and carburetion frequently to maintain good combustion and to minimize rich mixtures. Check nozzles and injectors of Diesels at frequent intervals to minimize smoky combustion.**

called typical. As shown, engine sludges consist of somewhere around one-third to one-half oil, the balance being water, soot, carbon, lead salts, iron, silica and "resins."

The water, soot, carbon and lead salts derive from blow-by of combustion products down past the pistons and into the crankcase. It is important to emphasize that none of these constituents originate in oil, but develop entirely in the combustion chambers and then work down past the pistons to contaminate the oil.

Water may be considered as the most objectionable contaminate of crankcase oil and is the chief cause of sludge formation. Wherever appreciable water contamination develops, sludge is almost sure to follow.

Water and clean oil will not mix, but water contamination in the presence of soot, lead salts and other insolubles may cause formation of pasty emulsions which are the starting point of sludge deposits. Water contamination may also destroy the detergent or dispersant action of heavy-duty oils. This can be illustrated by a simple test. If one or two per cent of lamp black is thoroughly mixed in a sample of heavy-duty detergent oil, most of the lamp black will remain suspended in the oil even on standing for several days or longer due to the dispersing action of the detergent additives. If a small amount of water is then added and the mixture reshaken, most of the lamp black will separate out within a short time, leaving the oil quite clear. Water contamination may, accordingly, nullify one of the chief virtues of heavy-duty oils so painstakingly developed and formulated by the oil industry.

Water a Combustion Byproduct

A FACT which seems to be overlooked is that about 1 gal. of water is formed from the combustion of each gallon of fuel. While most of this water of combustion is ejected through the exhaust in the form of steam, in a cold running engine a material portion may condense on cool cylinder walls, mix with the oil film and then wash down into the crankcase.

A second source of water contamination is seepage from the cooling system through blown cylinder head gaskets or cracks in the head or block castings. When very high percentages of water contamination are

(TURN TO PAGE 100, PLEASE)

PUBLICATIONS

USE THE POSTCARD—NO STAMP NEEDED

A selected list of the latest in literature—books, pamphlets, catalogs—chosen to help fleet operators solve maintenance and operating problems. Use free postcard.

L61. Engine Service Manual

Want to check up on engine overhaul procedures? Are you familiar with as many as 78 causes of high oil consumption in an engine? How would you like some factual, comprehensive information on engine tune-up and reringing procedure?

Here is just what the mechanic has been looking for—a 48-page booklet giving scores of trouble-shooting pointers and tune-up procedures applicable to all truck engines.

This publication is actually a service manual. A check-up chart is first introduced. It shows graphically what to look for and correct in engine overhaul. Several causes of high oil consumption are listed with remedial measures for each. Included is a table of land clearances for aluminum pistons, cast iron pistons, and a guide for determining proper size rings.

One division is devoted to a list of suggested mechanical operations for servicing the Ford V-8 engines, while other charts list causes of engine knock or slap, compression loss and other engine troubles.

A large part of the booklet consists of actual photographs showing each important step in the proper reringing of an engine.

This manual is a must for the fleet shop. Write L61 on the free postcard and secure a copy now.

L62. Driver Training Booklet

"Professional Driving" is the title of this pocket-size 72-page booklet compiled by a well-known oil company in the interests of better, safer driving. Every driver of a passenger car, bus or truck should read this book. The guide rules presented therein have been collected from interviews with hundreds of professional drivers, who have given their valuable advice for the benefit of anyone who sits behind a steering wheel.

They have given professional pointers on many phases of driving, such as, how to pull out of a skid, how to take a curve, how to ride the bumps, beat blinding lights, park in small spaces, drive safely on ice, avoid fatigue and how to handle a blowout. Regardless of how competent the driver thinks he is, he should find scores of pointers here.

This would be a good booklet for the fleet operator to read, so that he can tell whether his drivers are up to the mark. He may want to assign it to his drivers to read and question them orally on some of the points brought out.

The print is large, and the many illustrations make reading a pleasure. This is a publication the fleetman or the driver can't afford to overlook. Observance of the simple rules outlined will pay large dividends in accident-free trips and economical fleet operation. Write L62 on the free postcard for a copy.

L63. Veteran Training Study

In answer to the growing demand for a comprehensive explanation of how to establish an apprenticeship program and the procedures under the "G.I. Bill" when employing veterans as apprentices, a 30-page booklet has been prepared, entitled, "Setting Up An Apprenticeship Program—A Guide to Employers In Training Veterans For The Skilled Trades."

The booklet explains in detail how to determine the various provisions to include in an apprentice training program, as well as the steps an employer must take to obtain approval as a qualified "training institution" for veterans, and the steps a veteran must take to derive the benefits of the "G.I. Bill."

The booklet contains a complete list of state agencies designated by governors to approve business establishments and educational institutions under the "G.I. Bill" to train veterans; as well as other State and Federal agencies with which employers will have some dealings in setting up an apprenticeship program.

Copies of this informative booklet may be obtained by writing L63 on the free postcard.

L64. Motor Oil Data

The differences which exist between various types and trade brands of motor oils, in terms of quality and performance in engines, have caused considerable concern on the part of many automotive engineers and truck manufacturers.

Because of the importance of this fact to the fleet operator, a widely recognized oil company has compiled information on "What Premium Motor Oil Means in Terms of Performance" and has made the 16-page publication to the fleet field.

Included in this booklet is a list of definitions of the basic types of motor oils as set up by leading automotive engineers and petrolem technologists working in cooperation and under the auspices of SAE and API.

The booklet is devoted primarily to a series of tests of premium motor oil showing the differences which exist between different types and brands of oils under conditions of severe service.

Write L64 on the free postcard for a copy of the booklet.

L65. Piston Ring Pamphlets

A series of three pamphlets has been issued by the Sealed Power Corp. to acquaint the fleet operator with the characteristics of its products.

One phamphlet presents the various types of piston rings available from the company, while the other shows construction details of the heavy-duty pistons.

The third publication, featuring the Sealed Power GI-60 contracting groove insert, shows how this product should be properly installed to give pistons longer life.

Write L65 on the free postcard for one or all three of the publications.

PRODUCTS

USE THE POSTCARD—NO STAMP NEEDED

The newest in replacement parts, accessories, shop equipment and supplies. For more details of products described or advertised on these pages, use the accompanying free postcard.

P349. Electric Hand Lamp

The new Big Beam No. 211 portable electric hand lamp has a single focus adjustment whereby it will deliver a spot or spread light—a 1500 foot beam or bright localized light.

It is powered by two standard dry cell batteries with pressure type connections. Weighing only 5 lb. with batteries, it can be set down anywhere or clamped in a special hold-down fixture accessory.

It is manufactured by U-C Lite Mfg. Co., Chicago, Ill.

Use Free Postcard For More Details.

P350. Fast Battery Charger

The Hartman Corp. of America announces production of a small rapid battery charger combining light weight, portability, and compactness.

The unit has an output of 80 amperes, weighs 80 lb., and has 80 ft. of A. C. cable which allows a large radius of action from any electrical outlet. Other features include a heavy duty rectifier; double handles, for easy lifting; rubber tired 8 in. steel wheels, and swivel caster; large "quick read" 0-100 ammeter; automatic time switch; and specially designed, heavy duty, bronze plyer-type battery clamps with serrated jaws and insulated hand grips.

The "Super 80" was designed for use in fleet and service shops, filling stations, public garages and parking lots.

Use Free Postcard For More Details.

P351. Cracked Block Repair

To speed repair of cracked engine blocks, and other metal castings, Kerkling & Co., Burbank, Calif., is introducing the K & W Metal Applicator for use in conjunction with the K & W mechanical method.

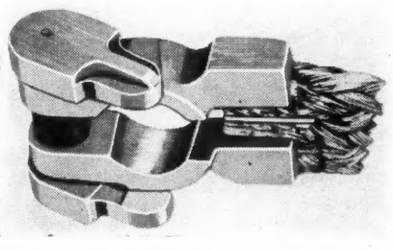
With this equipment, fewer pins are employed in lacing the cracks, and after these pins are peened, the applicator is used to fill the remainder of the channel with the proper metal in far less time than is required for drilling, tapping and peening if pins were lined along the entire length of the channel, according to the company.

In addition to its primary purpose, the applicator can be effectively used for filling blow holes in castings, brazing and soldering. This makes it a multi-purpose machine that can be used for other types of work as well as block repairs.

Use Free Postcard For More Details.

P352. Terminal Connector

The T & E Battery Terminal Connector manufactured by T & E Products Co., Williamsport, Pa., is offered to the trade as a clamp that is electrically and mechanically tight and yet easily removed from the battery post.



A precision taper or cam on the new connector is said to insure proper alignment and effect a perfect adjustment of the battery cable. The cam is designed so as to be easily accessible to wrench or pliers, eliminating frozen and locked connections. Just one turn of the cam is necessary to remove the clamp. A special bushing in the clamp acts as a bearing and is said to insure free movement of the cam member so that freezing of the connecting bolt is impossible.

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P353. Adjustable Wrench Sets

Adjustable Spanner Wrench Sets have been added to the JO Line tools manufactured by JO Mfg. Co., South Gate, Calif.

They come in three sizes which fit the following range of diameters: ¾ in. to 2 in., 1¾ in. to 4 in., and 3½ in. to 6 in. Each wrench set is of forged steel, heat-treated and cadmium plated.

A set consists of a handle, removable screw, a key arm, and three pin arms in graduated sizes. With these tools it is unnecessary to carry several wrenches in a tool box as the spanner wrenches fit the range of diameters specified with any standard mechanic's handle.

Use Free Postcard For More Details.

P354. Protective Degreaser

Gaybex Corp., Nutley, N. J., has released its Ready-to-Use Emulsifying Degreaser, G-BEX D for general distribution.

G-BEX D is a neutral emulsifying solvent, a cleaning and protective agent, having a minimum flash point of 165 deg. F. It is non-irritating to the skin and is considered non-corrosive to all standard construction metals. G-BEX D will not strip paint or lacquer and may be used for light or heavy duty degreasing by spray, brush or soak application followed by rinse.

Consumer trials demonstrate that steel bearings and parts could be safely handled without fingerprinting after being cleaned with G-BEX D and water rinsed. The slight protective film remaining after the wash persisted for several months.

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P355. Hydraulic Limiting Valve

The Hydraulic Specialties Co., Buffalo, N. Y., announces a new dash controlled Hydraulic Pressure Limiting Valve for in-

(TURN TO NEXT PAGE, PLEASE)

PRODUCTS

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(Continued from page 59)

stallation on trucks and other vehicles equipped with hydraulic brakes.

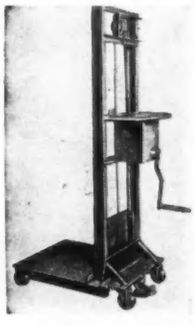
This valve is designed to be easily and quickly installed in the front wheel brake line and can be adjusted to limit or restrict the amount of braking pressure applied to the front wheels to prevent locking and skidding when driving on icy and slippery highways.

The valve is of bronze construction and will not rust or corrode. It is available with an 8 ft. heavy duty flexible control cable together with a modernly designed chrome-plated dash adjustment knob or without the dash control for installation on vehicles where it is desired to limit the amount of braking pressure applied to any set of brakes, such as tandem wheels and jobs equipped with air hydraulic brakes.

Use Free Postcard For More Details.

P356. Portable Shop Elevator

A low cost entry in the portable elevator field is the new Service Shop Lifter from the Somerville, Mass., plant of Service Caster & Truck Division of Domestic Industries, Inc.



Priced at $175 f.o.b. Somerville, Mass., complete with floor lock, the compact unit is ideal for a variety of uses. It can be used for raising tote boxes, draining drums, positioning heavy work, installation of machine parts, and for loading and unloading motor trucks.

The lifting platform is cranked up and down, while a specially designed automatic clutch locks the load in any position. Lifting carriage is equipped with sealed ball bearings, while the guide wheels themselves are of heat treated steel. Hand crank, which raises platform three inches with each revolution, is removable.

The Shop Lifter is easy to move about on its running gear of 4-in. roller bearing casters. Foot operated floor lock is standard equipment. Lock has molded rubber pad on bottom for floor protection.

Specifications include overall height, 6 ft.; lift of platform, 4 ft. 8 in. from floor; lowered height of platform, 5½ in.; platform size, 24 x 24 in.; capacity, 500 lb.; shipping weight, 260 lb.

Use Free Postcard For More Details.

P390. Water-Repellent Grease

For factory lubrication of tractor track rollers and other applications requiring a soft, water-repellent, non-separating grease, The Texas Co. has developed Texaco Star Grease No. 0. Made with lime soap, this product is heat stable and resistant to both water and oxidation.

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P357. Valve Removing Tool

Designed to jack out the most stubborn valves on any type engine, this precision-built valve jack developed by A. T. Hansord Mfg. Co., Minneapolis, Minn., is said to make a hard job easy and with no damage to the valve.

In operation the jack is placed on the block and the puller jaws are hooked under the valve head. The lock nuts are adjusted to the size of the head, and the handle is pressed down. It is said to work equally well on the L-head engine and on the V-8 type.

Use Free Postcard For More Details.

P358. New Type Jack

The Jiffy Lift Jack, a safe and simple automobile jack which is said to make tire changing easy, has been introduced by the Jiffy Life organization, Long Island City, N. Y.

Forged in one piece, the Jiffy Lift has no moving parts to lose or to become clogged with grease and dirt. Inserted between brake drum and tire rim, the car is driven up onto the lift which acts as a stand, raising the vehicle off the road far enough to remove the tire. The extra large base holds the jack securely in place, preventing the car from slipping off or settling down too low to remove the flat tire, according to the manufacturer.

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P359. Bumper Guards

Designed for strength and fashioned to blend in with the body structure, the new bumper guards manufactured by the Bumper Guard Co., Memphis, Tenn., will fit any type of truck to give full protection to the front end of the vehicle.

The bumper guard is braced in six places so that shock is evenly distributed and the entire unit is bolted and welded together for greater strength. The unit is attached to the chassis with two mountings.

Specifications of the bumper guard are as follows: Made of hot rolled, high carbon content steel, ½ x 1½ in., with 40,000 to 50,000 lb. per sq. in. tensile strength. Brackets are ½ in. x 2 in., hot rolled steel. Weight for 1-ton trucks or less is 50 lb., and over 1-ton size is 98 lb. Guard is 6 ft. 2 in. wide, from bumper to lights and 34 in. from bumper to top center over hood.

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P360. Tire Mold Cleaner

Kelite Formula 304, a new, fast rubber tire mold cleaner, used by immersion or brush on application, was announced recently by Kelite Products, Inc., of Los Angeles, Cal. This new material can be used by large or small operators, because while mold cleaning tanks are desirable, they are not completely necessary.

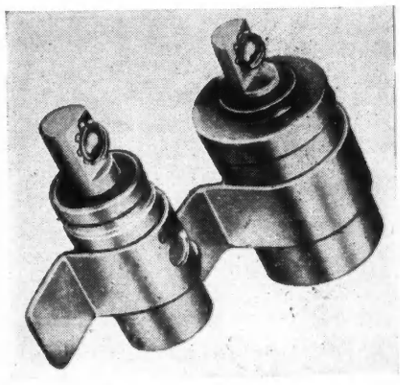
Fast acting, its speed is said to provide complete removal of normal deposits of carbonized synthetic or natural rubber in about three hours. Extreme deposits may require longer immersion or reapplication. A wipe and a water rinse complete the job. No wire brushing or scraping is necessary.

Use Free Postcard For More Details.

P361. Heavy-Duty Suppressors

The Industrial Capacitor Division of the Cornell-Dubilier Electric Corp., South Plainfield, N. J., has announced the design of the type MC vehicular filter capacitor series for heavy-duty service on busses and trucks.

Designed for spark suppression, noise elimination, and arc quenching, these capacitors are said to be of rugged mechani-



cal design and capable of withstanding excessive temperatures. The capacitor unit is hermetically sealed, oil-impregnated and oil-filled.

The type MC series is well-suited for

future applications when communication equipment is installed on heavy transportation equipment, according to the manufacturer.

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P362. Plastic Body Filler

Wherever dents, cracks, scratches or holes in metal, wood, tile, or plastic require filling flush with the surface for the purpose of refinishing like new, Econite Plastic Filler introduces a new economical and satisfactory repair.

The filler is easily applied and less costly than the processing of metal solder in many types of application. Once filled and hardened, the plastic filler can be body-filed or sanded to a smooth feather-edge finish, ready for painting. It withstands alkali or acid solutions and substantially resists heat and water pressure, according to the manufacturer.

Because of its air-drying properties, it eliminates the use of torches or applied heat. Easily applied with a glazing or putty knife, the filler does not lose adhesion with age.

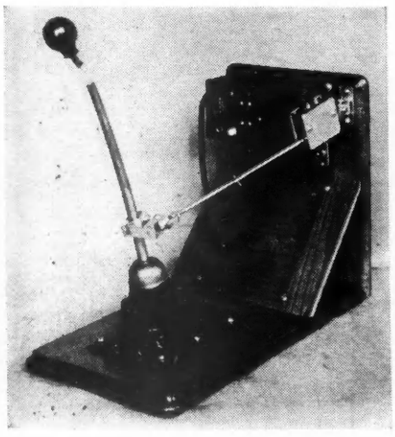
Use Free Postcard For More Details.

P363. Engine Shut-off System

The Reco Safety Auto Control developed by the Reynolds Electric Co., Chicago, Ill., is a system for automatically shutting off the engine 12 to 15 sec. after the truck is stopped and the shift lever is in neutral. The device is said to thus save up to 1/3 gasoline consumption and lengthen the life of engines since idling is kept to the minimum.

The shut-off device consists of a control switch for connection to the gear shift lever and a cabinet which is mounted on the left side of the cab below the instrument panel. This contains a relay and a thermal delay switch, push button and tell-tale light.

Since the adjustment is such that any position of the gear shift lever outside neutral does not operate the shut-off, the engine will not be stopped at a stop sign



as long as the gear is engaged and the clutch is held out. When the switch does turn off the ignition, the dash button is pressed and the engine will start again.

Use Free Postcard For More Details.

P364. Plastic Covered Cables

Standard Motor Products, Inc., of N. Y., has adopted vinylite as insulation for the Blue Streak automotive cables.

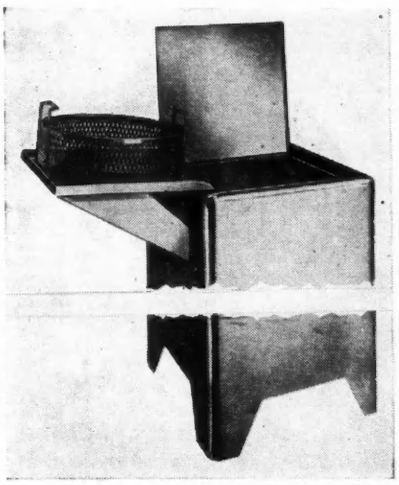
Not only does the Blue Streak Vinylite cable successfully resist the effects of grease, oil, gasoline and "corona," it is flame resistant as well, according to the company.

In addition to its natural properties of toughness and durability, vinylite—as an insulating material—eliminates several installation problems. Because the tough vinylite insulation requires no extra protection, the cotton braid, used in conventional cables, is eliminated . . . making for a smaller outside diameter. As a result, a quicker, easier wiring job can be done when it is necessary to pull cables through a conduit.

Use Free Postcard For More Details.

P365. Automatic Parts Washer

The new Bagnall "Geyser" Automatic Parts Washer, developed by Bagnall Washing Equipment, Inc., Chicago, Ill., employs the "supercharger" principle, as used on aircraft engines, for washing nuts. This



impeller transmits such great speed-flow and sheer impact to the cleaning fluid that chips, grit, grime, grease and other foreign matter are removed in a matter of minutes from all holes, openings and surfaces of the parts being cleaned.

The washing chamber, pressure chamber, and power section are combined in this one compact steel unit, only 20 in. square and 36 in. high.

Use Free Postcard For More Details.

P366. Lubrication Bucket Pump

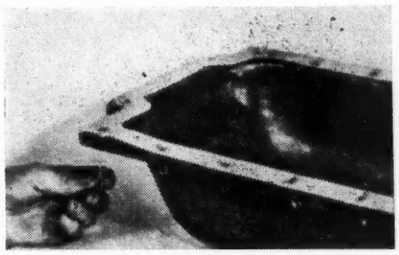
Lincoln Engineering Co., St. Louis, Mo., announces a new bucket pump known as the "Porto-Pak." This improved high-pressure grease gun is of all steel construction and holds 30 lb. of lubricant. The Porto-Pak features a positive automatic venting device in the pump tube assembly which operates instantly when the pump handle is raised momentarily to topmost position. This venting device relieves pressure in the hose assembly permitting lubricant to drain back into container, saving lubricant and eliminating dripping when coupler is disengaged from the grease fitting. The venting device is wear-proof and has no moving parts or springs.

Other features of the Porto-Pak are: ease of operation—up and down pumping action; no gears or crank; quickly refilled—full open top provides maximum filler opening; rugged construction—container and lid are made of heavy-gage steel; convenient to carry.

Use Free Postcard For More Details.

P367. Gasket Clamps

The Gasket-Klip, a spring steel device for holding gaskets to the housing during installation, has been called a new me-



chanic's tool for this particular job. Developed by the A. T. Hanscord Mfg. Co., Minneapolis, Minn., these clips are simply slipped through the holes in the pan or housing, through the gasket, so that spring tension holds the gasket in place. After the cap screws are started, the clips can be removed through the bottom of the hole by compressing the spring.

Gasket Klips are available through jobbers at $1.00 per card of 12 clips.

Use Free Postcard For More Details.

P368. Stud Driver and Puller

Driving or pulling studs by gripping as little as ½ in. of the unthreaded body of the stud is featured by a new combination stud driver and puller developed by Titan Tool Co., Fairview, Pa.

The tool is placed over the stud to be set or removed and requires only a slight left or right hand turn to effect a grip on the stud. When the chuck of the tool is lowered over a stud, the upper end of the stud contacts an adjustable stop screw. This automatically elevates the core and brings the rolls into centralized contact to the cam surfaces in the driving member and stud. When rotation is stopped the tool may be lifted off the stud without reversing the direction of rotation.

The Titan-Kirkland Combination Stud Driver can be supplied in ratchet type for corners where interference prevents complete rotation of a T handle tool. The T handle, ratchet, or power tools are made in standard sizes from 3/16 in. to 1 in. inclusive.

Use Free Postcard For More Details.

P369. Improved Spring Shackles

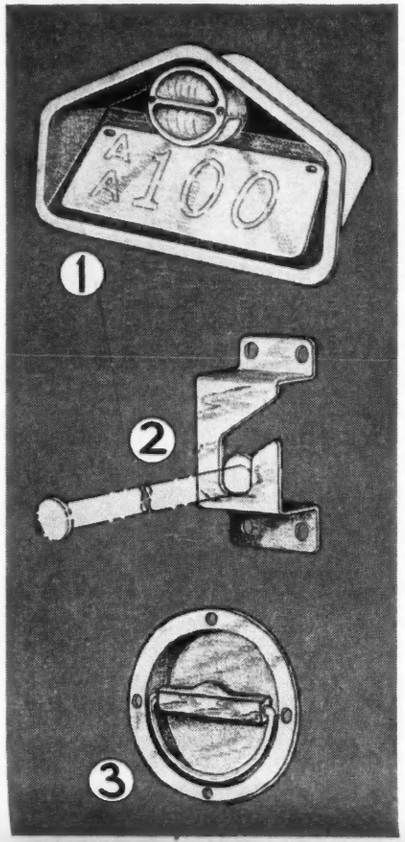
The new Ace Spring Shackles, developed by Automotive Replacements, Inc., Chicago, are said to eliminate rattle, vibration and side sway. They also improve steering by continuous close fit.

(TURN TO PAGE 157, PLEASE)

CCJ CUSTOM BODY SERIES

★ To insure a custom design for your vocation, be sure to mail answers to questionnaire on Page 43, June CCJ

DESIGN NO. 2 • PACKAGE DELIVERY BODY



In the June issue, Commercial Car Journal resumed a reader service — the improvement of vocational truck body design — which fleet operators can put to profitable use. The design shown and described on these pages, for example, has considerable eye appeal but even casual inspection will reveal efficiency features not normally contained in bodies in this category.

The designer is well-known among eastern truck and body builders. Before the war he designed numerous bodies exclusively for CCJ readers. Besides designing bodies, he has worked in body shops and knows the practical problems of truck body building.

Operators are reminded that these designs are copyrighted. Arrangements can be made, however, with the designer for procuring detailed construction drawings and consultation on specific problems. If such service is desired, write to Editor, Commercial Car Journal, 56th and Chestnut Sts., Phila. 39, Pa.

Next Month: Platform Body.

by E. M. WESTBERG
Body Designer

E. M. Westberg

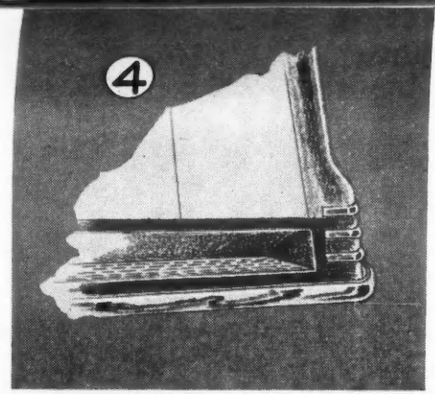
THE second of the series of postwar commercial custom body designs features a Package Delivery Unit along conventional lines having a capacity of approximately 275 to 300 cu. ft., the exact size being entirely dependent upon the vocational requirements. This design should appeal particularly to department stores, laundries, bakeries, florists, package or special delivery services, cleaners and dyers, grocers, plumbers and certain wholesalers of small articles.

Every effort has been extended to other than the one shown below.

The basic construction of the body is well within conventional practices and could best be built of wood framing covered with steel or aluminum panels. However, it can very well be constructed of all steel. Most of the special formed panels could be obtained from sources specializing in this type of work.

Comfort for Drivers

IN ADDITION to the advertising panel and special background for the panel special attention is called to the massive high rub rails so designed to be most effective in heavily congested traffic areas, lower panels skirted to eliminate rear fenders for



A few of the hardware and construction details suggested for this body are shown in the panels at left. Fig. 1 shows a recessed license bracket which not only protects the plate but the combination tail and plate light as well. Fig. 2 is a removable hanger rail and bracket which can be used to good advantage by cleaners and dyers and similar vocations. Fig. 3 is a recessed rear door handle. Fig. 4 shows a recessed rear step that provides safe footing for rear body access

develop a striking design without deviating too far from conventional practices to accomplish this end. Color schemes and newly developed materials have been brought into play. For example, the corrugated stainless steel or aluminum background for the featured advertising panel is recommended to be made of a newly developed embossed material which has both beauty and utility and comes in a variety of designs smarter appearance, full vision windshield to relieve driver strain and fatigue and increased safety, also the sliding doors which are provided for increased speed and efficiency for frequent stop and go deliveries.

Special Features

ILLUSTRATED detail features cover a tapered recessed license plate bracket so designed and tapered to

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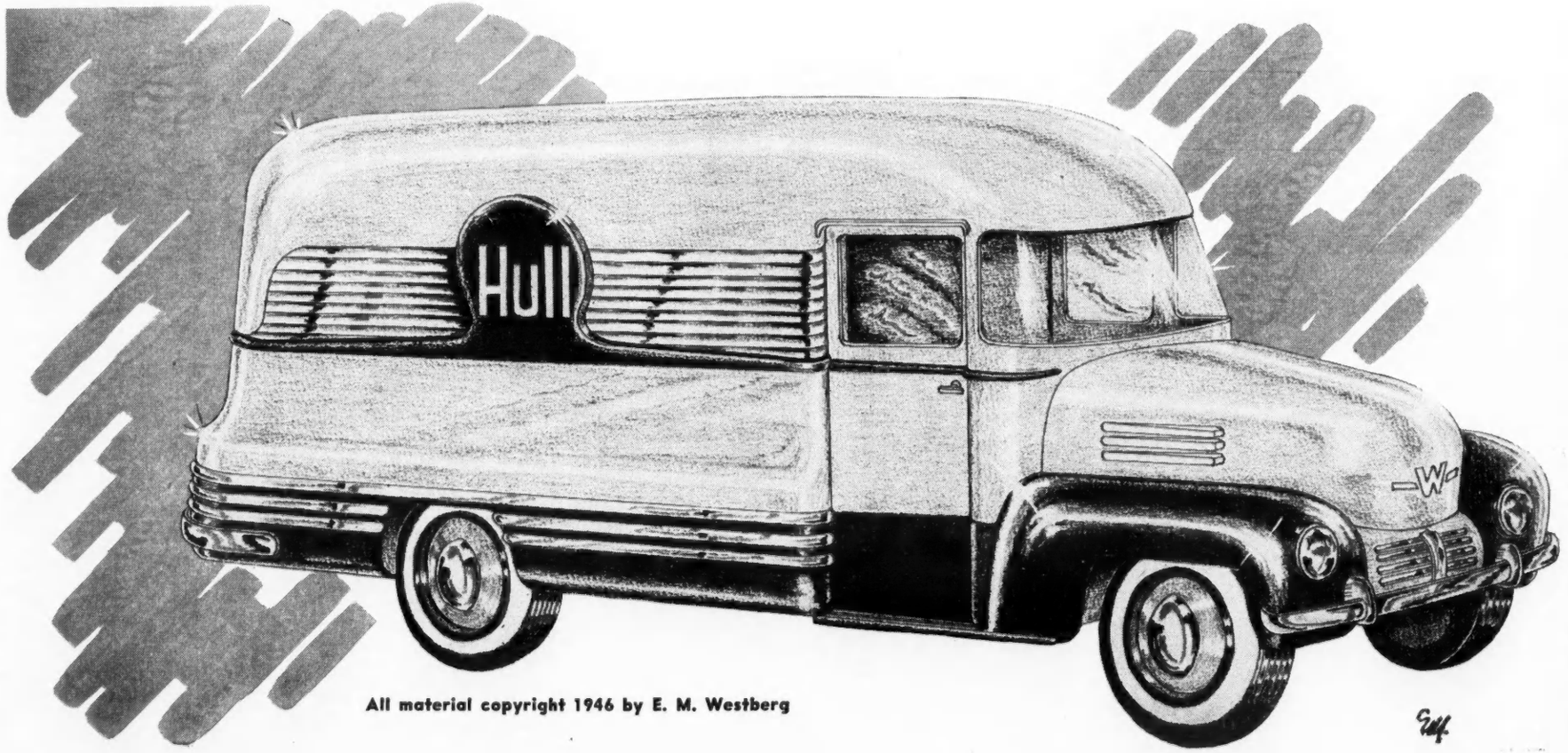
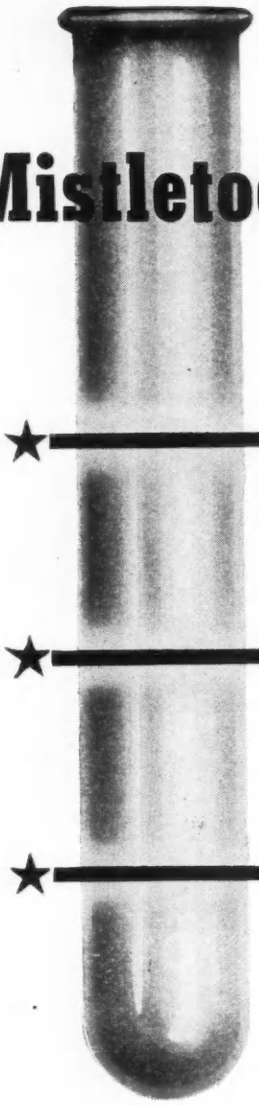


★ CCJ CUSTOM BODY SERIES

Mistletoe Assays Safe Driving——



by H. H. GOFF

Safety Director, Mistletoe Express Co., Inc., Oklahoma City, Okla.

Safety Contest winner for three consecutive years outlines driver training program and system designed to obtain high rejections of unsuited driver applicants

WHILE Mistletoe has won top place for the third consecutive year in the National Fleet Safety Contest, we have, nevertheless, revised and reorganized our method of hiring drivers.

This new system is designed to obtain a high rejection of applicants unfitted for the job—mentally, physically or in general character.

Each applicant is interviewed first by the department head under whose direction he will work. He determines from application blank and personal interview the applicant's previous history and experience. We only hire experienced drivers and do not train new drivers.

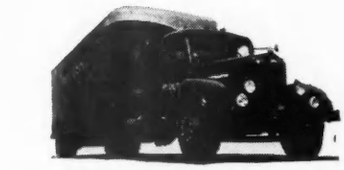
Applicants Carefully Checked

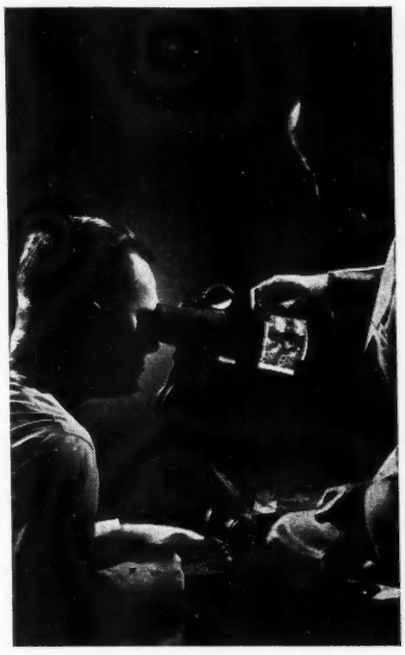
IN OKLAHOMA all accidents are reported and recorded with the state highway patrol, so we check each driver's application with the patrol to discover if he has been involved in an accident regardless of whether he states on the application that he has or has not. The application is further checked for any evidence of a criminal record. Obviously in handling express we can't have employes who have any blemishes on their characters.

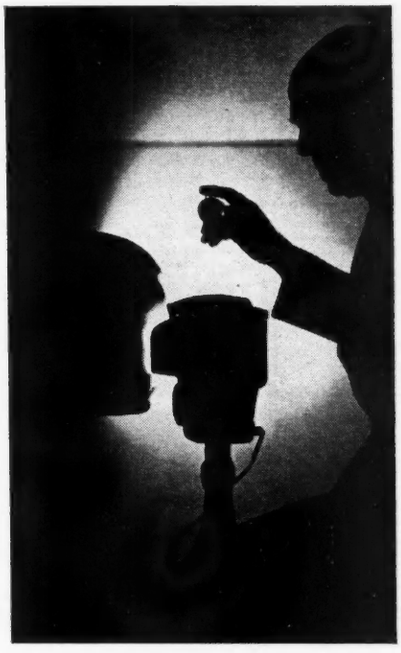
Should the applicant pass these hurdles, there is yet to be determined the type of person he is. At this point we try to determine if he has, or will develop, the right attitude toward the company, his job and the public. Many applicants make a perfect record up to this point.

If the prospective driver passes this examination, he is sent to the doctor and given a full physical check up in our own clinic. These tests are as complete as they can be made and include a Wassermann test, among other things.

Having passed the preliminary test







Upper left. A typical unit from the Mistletoe fleet. Above. Prospective driver gets a depth perception test

Above. Applicant is blinded with a bright light and his recovery time is noted accurately with stop watch

and the medical examination, the applicant still has a long way to go. It is then that he comes to me. His medical report has preceded him, and I have that when I interview him.

The applicant's next test is for physical qualifications for safe driving. He may be perfect physically, have a perfect driving record and yet fail in these new tests which have been devised.

Vision Checked Thoroughly

THIS man may have faulty vision; he may be color blind or his side angle of vision may be so narrow that he would be an accident hazard.

We test his visual acuity with a telebinocular with which we can measure the vision of each eye separately. We demand a visual acuity of 20-30 in each eye. We require a side angle of 80 deg. We have a method by which we can prove the check and be sure that the applicant has not been able to fudge a little. Next test is for depth perception or the ability to judge distances accurately.

One of the most important checks is for night blindness. We use an instrument which blinds the applicant in the same manner as a bright headlight would, and then clock the time it requires him to recover by a stop watch. In some cases where the recovery is a little slow, we prescribe Vitamin A. This procedure was followed during the war with aviators.

The applicant who has arrived at this point is physically fit and has proper faculties to make a good and a safe truck driver. We then give him a 10-mile driving test to study his driving habits.

Driver Formula Evolved

WE HAVE found that we can have a good vehicle and a good man, physically, and still have plenty of trouble. So, we have evolved a formula which is: Vehicle 20 per cent, Man 20 per cent, and Attitude 60 per cent.

We can produce an almost perfect vehicle to drive, and we can select a near-perfect specimen of a man, but we can't teach attitude—we have to select it from among the applicants. We have to learn his attitude after he is hired.

Safety Training Begins

WE then go over with the applicant, who has passed all previous tests, a safety booklet which we have written. He is requested to study this book after which he signs a statement that he has read the book and understands that safe driving comes first and schedules come second.

Here are some excerpts from the booklet: "The observance of every form of good driving, courtesy, care, proper speeds and road ethics is requested of all employes. The privilege of driving a company-owned vehicle is granted only to those who will subscribe to and follow the desires of the management in these respects.

"Each motor vehicle represents a sizeable investment assigned to the custody of an employe-operator for the proper conduct of our business. When properly operated it is an efficient instrument of service and a credit to our company. When improperly operated, impairment of service, damage to property, injuries to others and to YOU can easily be the result.

". . . Remember that it is your life, your health, your limb, your pay envelope and your family's welfare. Drive safely."

The driver is advised in the book that all city and state laws are his direct responsibility, that a go signal does not insure a safe crossing, that all intersections are dangerous, that a full stop must be made for "Flashing Red" signal and a "Red" signal.

The book cautions the drivers that speeding is a term that applies to the immediate situation, and that due to the place and situation, a speed of 10 m.p.h. might be worse than 60 m.p.h. in other places.

Definite speed limits are given for school zones, business districts and the open road. Drivers are warned not to contest the right-of-way and, if in doubt, to give it to the other driver. Pedestrians, always, must be given the right-of-way.

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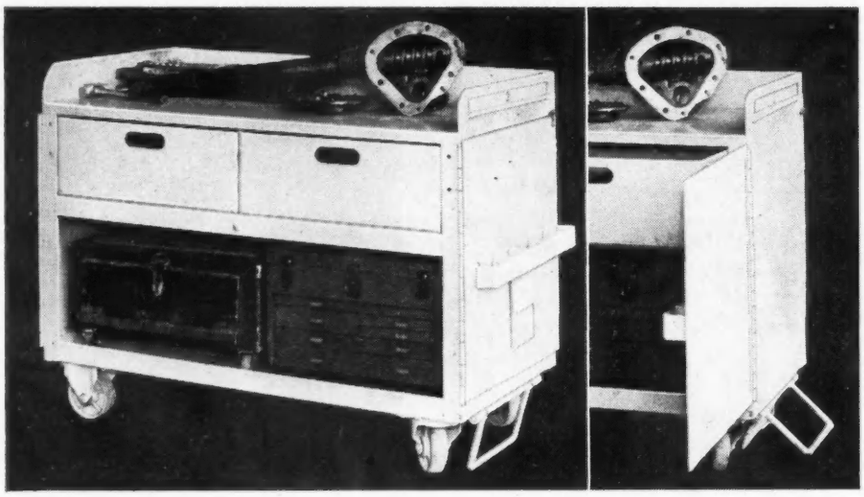


Above is the portable workbench used by Signal Oil Co. Parts needed for next job are on bench, needed tools are in drawers and on shelf below. Doors are folded back to sides. A brake arrangement is shown at lower right and in inset

Portable Workbench Cuts Job Time 20%

Mechanic rolls bench to stock room for needed parts and special tools, then rolls on to job, eliminating retracing steps and moving trucks

AT THE Signal Oil Co.'s Downey, Calif., garage, 15 portable workbenches are in use, servicing 68 vehicles, and results have been gratifying and noteworthy. A conservative estimate is that 20 per cent of a mechanic's time is saved.

Signal Oil assigns a mechanic to a portable bench and gives him a work order. Studying the work order, the mechanic knows in advance the tools and parts necessary for the job. He simply rolls up to the stock room with his workbench, loads up, and pushes out to the main floor. When the truck is brought in, the mechanic is "Johnny-on-the-spot" —he has his tools and virtually all parts for the job, large and small, right at his elbow. He rarely has to leave the spot until the job is finished.

Another time-saving point is that the mechanic goes to the job—the truck doesn't have to be brought to the mechanic. This eliminates troublesome, time-consuming maneuvering of trucks and trailers into position. With the portable workbench, the truck need only be driven into the garage and is accessible at any spot that it may stop. Trailer and tractors need not even be detached.

Still another advantage over the stationary bench is that there is no possibility of mixing and losing parts in other mechanic's job. Each mechanic now has his own bench, on wheels, and can arrange his equipment on it to suit himself, without fear or loss or confusion of tools and parts.

Any lengthy jobs in a shop using stationary benches limit the workbench space of the rest of the crew. This tie-up of space is costly in time. However, no tie-up problem exists with a portable bench. The workbench stays with the job until work is complete, depriving no one of any work space. There are sufficient benches to go around for every job.

Principal Features

THE benches used by Signal Oil Co., designed and built by Jack Brooks, Downey fleet superintendent, differ in several features from those now available on the market. They are 2 ft. wide, 4 ft. long and about 30 in. high, built of light metal and closed on three sides. The fourth side has doors which can be closed and padlocked when the bench is not in use.

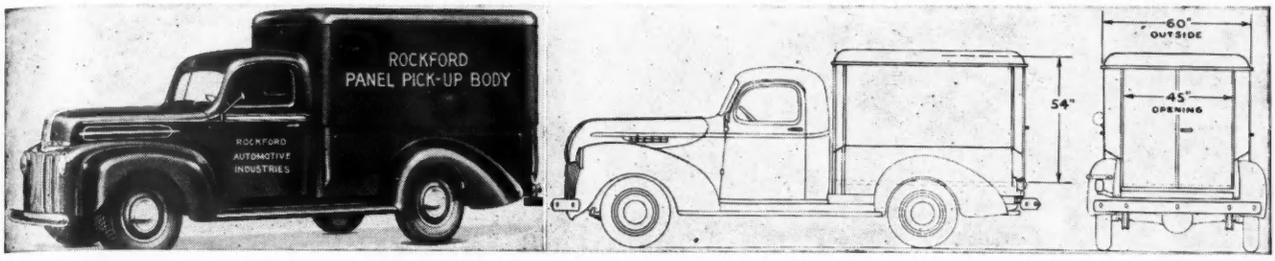
It is easily handled and moves on four 4-in. casters, two stationary and two swivel. It has trays and drawers for an assortment of parts, a lower shelf and top shelf upon which heavy parts or equipment can be carried. There is no "dead space" as every part of the bench is usable, including the inner side of the doors which is racked off to accommodate small tools.

On one of the top corners there is a reinforced plate to which a vise can be bolted, if needed.

A clever feature of this style bench is the brake arrangement. It consists of a bar at one end of the bench which works on the principle of the parking stand commonly used on the rear wheel of bicycles.

In addition to the estimated 20 per cent saving in mechanics' time, Mr. Brooks points out that, since the inception of portable workbenches, mechanics' morale is at a high point.

Knockdown Bodies Designed for Light Trucks



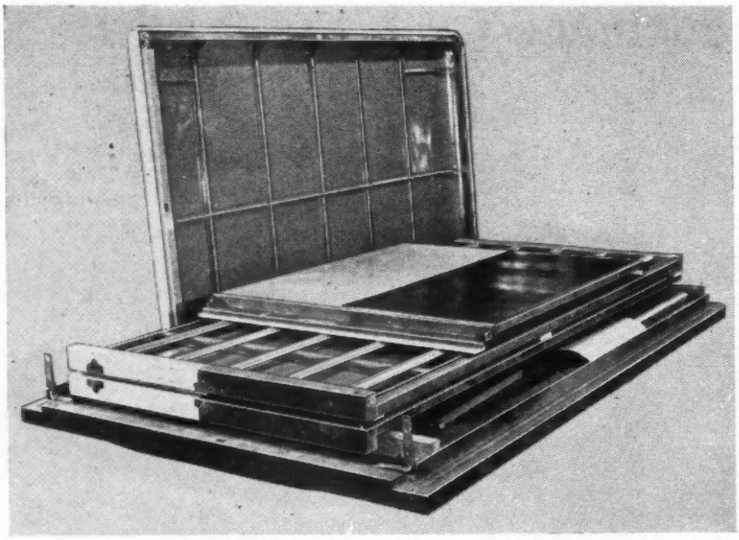
DESIGNED for mass production and built in standard sizes to fit all standard pick-up truck widths and lengths, the new Rockford Knock-down panel pick-up body can be installed in two hours.

This body is a knock-down package unit built in sub-assemblies, in prime paint, and is shipped with all necessary bolts and instructions for installation. The hi-tensile pressed steel framework is welded together in top, side, front and door sub-assemblies, which are bolted together in the shop.

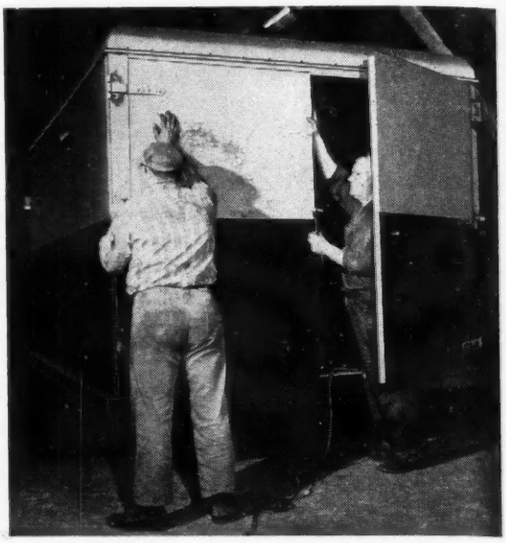
Length of the body is 78 to 108 in.; width, 60 in. outside body panels above flare boards. Height is approximately 54 in., and the door opening is 45 in. width. Panels, roof, front and sides are of 22-gage stretcher levelled steel.

Doors are optional. They may be obtained in full length or half doors above the tail gate. Body panels are replaceable in case of damage. Built by the Rockford Automotive Industries of Rockford, Ill., this new body is especially designed for all current production flare board and express type bodies.

The new 750-gal. triple combination FWD fire fighter, Model F75T, employs the FWD four-wheel-drive principle with a center differential which imparts a balanced tractive effort to all wheels. This feature gives the driver better steering control as wheel slippage and the tendency to skid is reduced. The powered front wheels pull in the direction steered enabling the vehicle to take curves safely at higher speeds, the manufacturer states. When difficult operating conditions are encountered and traction is lost, a manually controlled lock eliminates the center differential action and provides positive drive to both front and rear axes. Powered with a 6-cyl. 190 b.h.p. FWD engine, the Model F75T has a piston displacement of 525 cu. in. and develops 410 ft. lb. of torque. The wheelbase is 160 in. The new open type all steel body of 12 gage steel has a hardwood slatted removable floor

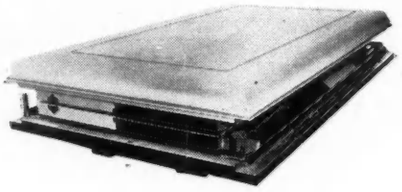


Krieger bodies are shipped as a compact unit, shown below. Above the roof covers panels, doors and corners, which rest on oak floor



Here doors are being attached to assembled unit. Two can assemble this body in short time.

New, All-Steel Van Body Sold in Knockdown Sections



Easily assembled 10, 12, 14-ft. units are strong, lightweight; sections replaceable

BEAUTY, strength and light weight have been combined in the new knockdown bodies now under construction at Krieger Steel Sections, Inc., Long Island City, N. Y. Designed so that any two unskilled men can assemble them and mount them on the chassis these bodies are offered in three models: 10, 12 and 14-ft. lengths with 6-ft. headroom on the inside and 7-ft. widths inside. Weights of the three respective lengths are 1680, 2035 and 2352 lb.

Several important advantages are claimed for this type of body. Knockdown sections facilitate shipping and make replacement of parts easy. While the frame sections are welded, they are easily removed in case of damage. In the event of an entire side being damaged, a new side can be purchased and replaced for less money than repair of the damaged section would cost.

Construction Details

THE floor of the body is of 1½-in. oak dressed down to 1¼ in. and shiplapped. The rub rail is made of 10-gage steel with a bead in the center. Cross sills are fashioned of 12-gage steel with a 5-in. tapered web. Uprights and spacers are fabricated into the shape of a hat section and are of 16-gauge steel. Corner plates are of 12-gage steel, and skin sheets which are riveted and welded to the sections are of 20-gage cold rolled steel.

All uprights and roof bows are of 18-gage steel and are spaced on 24-in. centers. The front corners are fashioned to use a double overlapping "Z" section. Exteriors of corners have a 16-gage radius plate which improves appearance and is removable and replaceable in case of damage.

Supplied with the basic body are interior protective rails 3¾ in. wide which are also removable. Interior base plates are supplied to screw into the side uprights. These plates have a return flange so that nothing can drop down between them and the exterior skins. The body is shipped with a coat of prime applied to all exterior parts. The interior is completely finished in gray enamel.

Sections are crated so that the floor section forms the base of the package. A fleet operator can take the entire package as he receives it and bolt it

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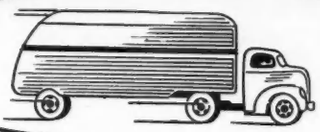
Exide...

THE LONG-LIFE BATTERY WITH THE LOW COST RECORD



Thousands of fleet owners know now ... more positively than ever before... that when they buy an Exide, they buy to last, and they buy to save. Months and years of exceptionally hard service supply the proof... not only that Exides can be counted on for thousands of extra miles, but also for a lower cost per mile of operation.

The fine record of Exide Extra-Duty Batteries in motor truck service is due to their electrical characteristics, correct design and rugged construction ... results of Exide engineering and manufacturing skill.

Exide
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

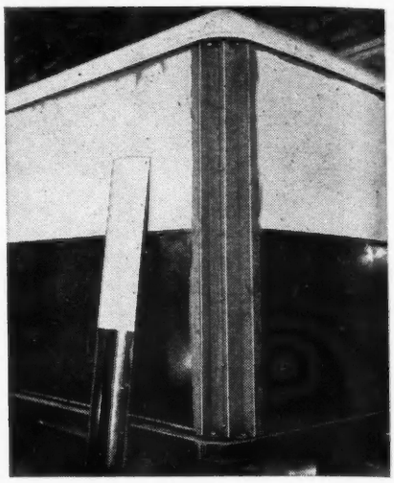
NEW ALL-STEEL KNOCKDOWN BODY

(CONTINUED FROM PAGE 70)

to truck chassis before he uncrates it.

The price of the body will be quoted as that for a basic body, that is, an enclosed van of the size requested by the fleet operator, but it will be without doors or any extras. Doors and extra equipment will be given separate price quotations. Examples of the extra equipment are as follows:

All fittings and brackets needed for mounting panels and built into floor



All panels are in place and last corner piece stands ready to be fastened

Interior

Diameter plate.

Rear Enclosures

Tailgate only—18-in., 22-in., 24-in.

Tailgate outside full length rear door.

Full length rear door, hinges, locks.

Doors above 22-in. tailgate, hinges, locks.

Enclosed rear door (one) 32 in. wide.

Enclosed rear doors (two) 20 in. wide.

Side Door

32 in. wide, hinges, locks.

Other Extras

Channel bumper and brackets.

Side step.

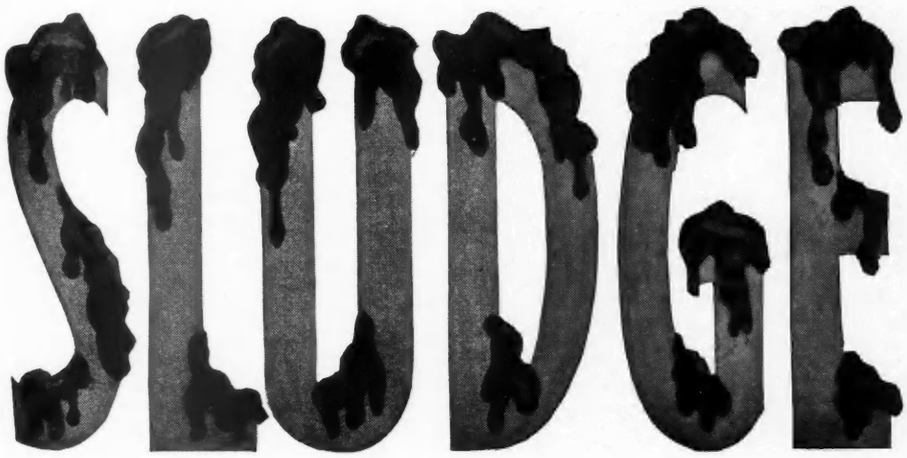
Rear step.

Safety step.

Bodies will be marketed through body builders and large distributors. This branch will also carry a stock of extra parts such as rub rails, side skins, etc.

One of the original ideas attributed to OK Motor Service, Inc., Chicago, is the procedure of carrying the slogan, "Boosting America" on the sides of its equipment with the displaying of patriotic messages. By constantly searching for better ideas and methods of operations, maintenance, safety and employee relations, OK has found that it can serve shippers more efficiently

HOW YOU CAN CONTROL



now you can purge engines of loose sludge EASILY, THOROUGHLY and AT LESS COST than you would have believed possible

These are no mere advertising claims. These are *facts*. PROVED FACTS. Proved on some of the biggest fleets in America. Proved in unbiased engine-testing laboratories... CISCO SOLVENT, product of Cities Service, DISSOLVES AND REMOVES LOOSE SLUDGE IN 20 MINUTES.

CISCO SOLVENT is a patented engine cleaner. THERE'S NOTHING LIKE IT ON THE MARKET. It is designed for big users and priced to REDUCE maintenance costs... you buy it in 55-gallon drums.

CISCO SOLVENT is SAFE on all engine parts. You circulate it through the engine for 20 minutes to DISSOLVE LOOSE SLUDGE, clear oil lines, remove dirt, abrasives and metal particles. You can use it also to wash out transmissions and differentials and to wash down engines externally.

There's nothing like it. CISCO SOLVENT MINIMIZES SLUDGE TROUBLE.

Don't take our word for it. SEE for yourself. We'll be glad to demonstrate. Mail this coupon TODAY.

This offer limited to Cities Service marketing territories East of the Rockies.

CITIES SERVICE OILS
ONCE-ALWAYS

CITIES SERVICE OIL CO., ROOM 791
Sixty Wall Tower, New York 5, N. Y.

I want to see a demonstration of CISCO SOLVENT.

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COMPANY_____

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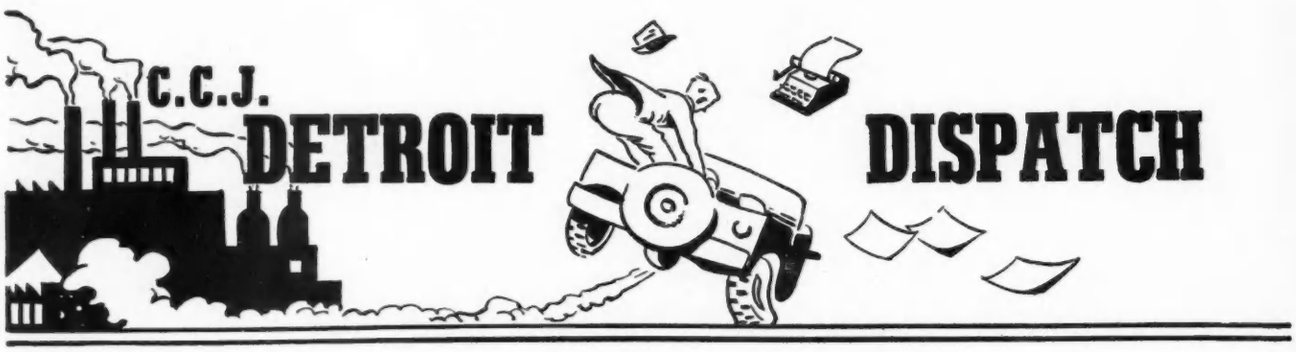


Parts Backlog Jam Up 400% . . . Effects of Strikes Still Felt . . . Anti-Freeze May Be Scarce . . . Truck Prices Heading Upward . . . Production Picture Good . . . But Panel Jobs Scarce . . . Registrations 100,000 Off '41

by LEN WESTRATE
CCJ Detroit News Editor

Parts Backlog Jam Up 400%

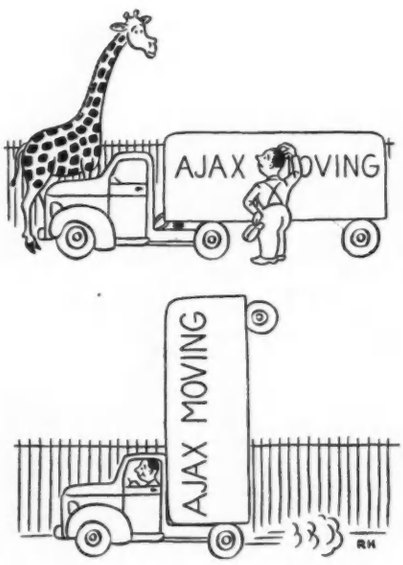
It is no news to fleet owners that replacement parts and service equipment are harder to come by than a good 10-cent hamburger. However, it might be helpful to pass on some of the whys and wherefores of the parts situation in general as dished out by several of the largest jobbers in automotive parts and equipment in Detroit. The first thing to remember, they say, is that production of replacement parts now stands at a higher level than it did before the war. Yet with millions of old jalopies and beat-up trucks still rattling along years after they normally would have been sent to the junk heap, the demand for parts to keep them cobbled up and running until they can be replaced by a new one has thrown the normal supply-demand situation so far off balance that it may be a year or more before off-the-shelf sales on all items are possible. Replacement parts backlog orders have increased as much as 400 per cent above a year ago.

Effects of Strikes Still Felt

Even with production at prewar levels, the parts makers gladly would boost production if they could, but strikes, price structures under OPA, and shortages of materials have worked so much mischief to date that it is surprising that they have done as well as they have. At this writing, one of the largest manufacturers of piston rings has been on strike for more than two months over an incentive pay dispute. This throws the whole system out of gear by putting a heavy drain on other piston ring makers and only aggravates what already was a short supply in relation to demand. The bearing industry and many others have been crippled by strikes. It is true that the number of strikes is waning, but the damage they have caused will be felt for weeks and months. The Westinghouse strike, for example, so curtailed the production of service equipment that items with electric motors are practically unobtainable. The shortage of steel resulting from the coal strike also is a serious factor in auto parts production.

Truck Prices Heading Upward

Resurrection of OPA has put the truck manufacturers right back where they were on June 30 in respect to prices. During the interim when price controls were off, they sat pat while waiting to see what would happen to OPA. Now that it has been restored, it is thought that the issuance of new pricing orders will be coming through to the various companies. At least two manufacturers had received price increases before OPA's demise. Federal Motor Truck got a boost of about 3 per cent and Studebaker one of approximately 8 per cent. In the case of Studebaker, when allowances were made for previous increases and for engineering improvements the price actually figured up to about 30 per cent over 1942 levels for comparable models. In both cases, dealer absorption of 4.5 per cent in discount cuts were included. However, the new OPA includes the Crawford amendment, which restores prewar discounts, so that both Federal and Studebaker dealers may recapture that amount, and new pricing orders will not require dealer absorption. In view of these two pricing orders, it would appear that truck prices in general are heading upward.



Anti-Freeze May Be Scarce

The most serious shortages are reported to be in bearings, piston rings, piston pins, clutch facings, metal gaskets, storage batteries, crankshafts, transmission parts, brake drums and gears, to mention only a few. One interesting item uncovered in the survey is that the supply of anti-freeze of all types is likely to be in short supply next fall and winter. One jobber reports that his allotment has been cut about 50 per cent under what he had been promised originally. He said suppliers tell him that the government requisitions are as high as last year's and that the synthetic rubber industry is a competitor for ingredients used in anti-freeze.

Production Picture Good

The truck production picture continues to look good, with output for July figures expected to show in the neighborhood of 90,000 to 100,000. Chevrolet in late July was leading the production parade in Detroit with 7000 to 8000 per week. Ford was in second place with about 3500 to 4000 and Dodge was turning out 2500 to 3000. While prospects for truck production are a little better than for cars, there are still many shortages to combat and nothing like real peak volume is in sight for many months. The nature of shortages to date have favored truck builders, since sheet steel and cushion springs are not nearly such big items as in a passenger car. However, copper, lead and pig iron are critically short and will hold back heavy truck output until relieved.

(TURN TO PAGE 76, PLEASE)

"It's a Studebaker truck...it's a pretty safe bet a smart man runs that business!"

THAT Studebaker Coupe Express Pick-up you see in the picture above is a full-fledged teammate of 197,661 Studebaker military trucks that wrote brilliant new pages of transport history at the fighting fronts.

It's smaller in size and in load capacity, of course. But it has the same kind of stand-up stamina as Studebaker's big, powerful army trucks.

This means it makes few trips to the repair shop throughout its long life, thanks to a combination of top quality materials and painstaking craftsmanship.

Makes upkeep hit the downgrade! Informed truck operators, who use hard, cold facts as their buying gauge, know there's nothing to match the gas-saving and tire-saving record of Studebaker trucks.

Those savings are a logical result of advanced principles of design developed and perfected by Studebaker's truck engineers in their great scientific laboratories and on Studebaker's unique, 800-acre, million-dollar proving ground.

It isn't possible just yet to meet all demands for this good-looking, restful-riding half-ton Coupe Express. But Studebaker's truck manufacturing facilities have been greatly expanded. And the time is coming when a full supply of Studebaker half-ton, one-ton and still larger models will be available.

Don't settle for anything less than Studebaker quality and economy. Make arrangements now with a nearby Studebaker dealer to give your new truck needs his special attention.

STUDEBAKER

South Bend 27, Indiana, U.S.A.

BUILDER OF TRUCKS YOU CAN TRUST

Studebaker's full line of top value trucks in all sizes includes this big, husky M-16 model, available as cab and chassis for standard stake or special bodies. It's powered by the highly efficient 6-cylinder Hy-Mileage Studebaker engine. Also in production now is a versatile one-ton Studebaker Pick-up.

DETROIT DISPATCH

(CONTINUED FROM PAGE 74)

. . . But Panel Jobs Scarce

The serious situation in sheet steel is reflected in the small number of panel delivery jobs that manufacturers have been able to turn out to date. A check late in July showed that only about 10,000 panel jobs had been built because of the shortage of large steel sheets needed in that type of body construction. During the first six months of 1941, by comparison, the industry turned out more than 58,000 panel trucks. Most of the panels built this year have been in the smaller categories, with very few being one-ton, ton-and-a-half or larger. There is some hope, however, that beginning this month the sheet steel supply will ease off enough to increase panel truck production a little, although there is no real hope of getting any volume worth talking about until September or October.

Registrations 100,000 Off '41

In the matter of truck classifications, R. L. Polk and Co. finds that registrations covering 96 per cent of all truck sales from Jan. 1 to July 20 show half-ton or less models leading with 66,153 units. This figure includes in round numbers 23,000 Fords, 16,000 Dodges, 10,000 Willys, and 9000 Chevrolets. Registrations of other classifications by g.v.w. are 5000 to 10,000 lb., 12,000; 10,000 to 14,000 lb., 59,000; 14,000 to 16,000 lb., 13,000; 16,000 to 19,000 lb., 3000; 19,500 to 26,000 lb., 8000 and 26,000 lb. and up, 6000. In spite of the fact that a few truck makers are registering more trucks this year than in the same period of 1941, total registrations are more than 100,000 units under the same period in 1941 in the area covered by the Polk figures. The reason is that the large volume producers have been hit more heavily by strikes and shortages than the smaller companies.

Truckers Coast on Hobbs Bill

Fleet operators in Detroit are not particularly affected by the Hobbs anti-racketeering bill, according to a representative of the Michigan Trucking Assn. He points out that most of the provisions of the bill are incorporated into present contracts with the AFL and that there is no reason or need to change them. Labor relations have been excellent so far, and there is no intention to change contract provisions which might be done under the statute, he said.

Tires Prewar Grade or Better

The return of truck tires with nearly as much natural rubber as was used before the war is a happy development for fleet operators. The allocation of several permissible production of truck tires of 8.25 and up with as high as 94 per cent crude rubber, compared with about 67 per cent used formerly. This should make truck tires now as good or better than before the war, considering the improvements made in cord and other production techniques. Truck tires of size 7.50 and down now may be stepped up from 13, 23, or 33 per cent natural rubber, depending on size, to 67 per cent. Hereafter, truck tires will bear no special sidewall markings, since casings with more than 50 per cent natural rubber no longer are designated by symbols indicating synthetic content. Passenger car tires now may be made with as high as 13 per cent natural rubber.

"He's got a cargo of air express."

Fleet Owners: *keep idle batteries at power peak!*

Get free loan of the new GOODYEAR truck battery

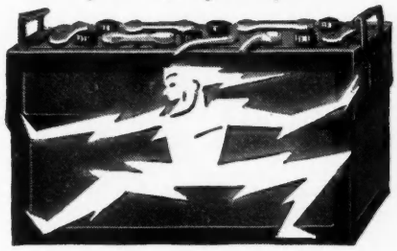
POWR SAVR !

YOU can get this money-saving Goodyear exclusive as a *free* loan if your fleet consists of 25 or more trucks; your Goodyear dealer will explain how.

Newest thing in battery care, the Goodyear truck battery PowR SavR keeps Goodyear batteries at full power while stored in your own garage. You get automatic, safe battery care —and power-*full* batteries available at all hours of the day or night. Better see your Goodyear dealer about this battery bonus right now!

PowR SavR, YKL—T.M.'s The Goodyear T. & R. Co.

Your best NEW battery buy:
the heavy-duty Goodyear YKL



POWER-FULL

—because it's on constant power charge—kept at *full* power by your Goodyear dealer's PowR SavR.

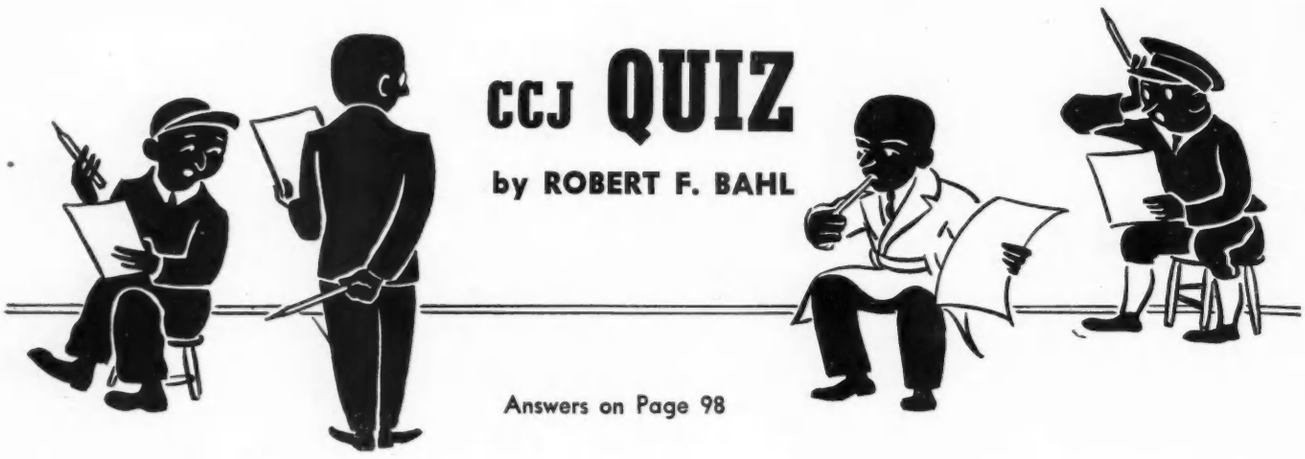
PACKS MORE PUNCH LONGER

—because of its cushioned power construction. Felted Fiberglas mats placed between the plates mean *sure* starts far longer!

GOODYEAR

THE GREATEST NAME IN RUBBER

YKL BATTERIES
—for buses, trucks, tractors

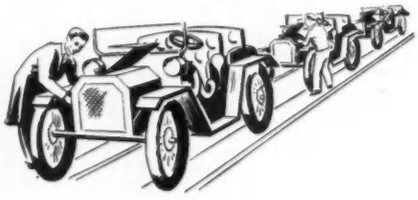


CCJ QUIZ

by ROBERT F. BAHL

Answers on Page 98

This year Detroit is celebrating the Golden Jubilee of the automotive industry. In connection with the Jubilee, a big banquet was held in June to honor 14 pioneers of the industry and to enroll them in an Automotive Hall of Fame. For your quiz assignment, you have to tell us something about each of these men. Each question is worth 10 points. A score of 70 is fair, 80 is good, 90 is excellent and 100 enters you in the CCJ Quiz Hall of Fame. You'll find the answers on page 98.



1.

J. Frank Duryea with his brother Charles organized the first automobile factory in America at Springfield. Had others followed in their footsteps, Springfield today might have been the motor capital of the world instead of Detroit. Of course, we're referring to . . .

a. Springfield, Ill.
b. Springfield, Ohio
c. Springfield, Mass.
d. Springfield Miss.

2.

Frank Kwilinski has been a workman for this company for 60 years. It is a company that prides itself on the long service of its employees and its many father-son combinations. The company is . . .

a. Federal
b. Autocar
c. Four-Wheel-Drive
d. Studebaker

3.

Charles B. King has inscribed his name in automotive history as the man who . . .

a. first drove an auto on the streets of Detroit
b. organized General Motors
c. invented four wheel brakes

4.

Barney Oldfield will be remembered as . . .

a. an inventor
b. a financier
c. an auto racer
d. an administrator

5.

Henry Ford is so well known that it would be hard to "stick" you on any question about him, but we're going to try anyway. The only sport that Ford has been known to indulge in is . . .

a. tennis b. skating c. golf

6.

Charles W. Nash once worked for W. C. Durant for $1 a day. Eventually, Nash replaced Durant as president of . . .

a. General Motors
b. Nash Motor Co.
c. Chevrolet
d. Dodge

7.

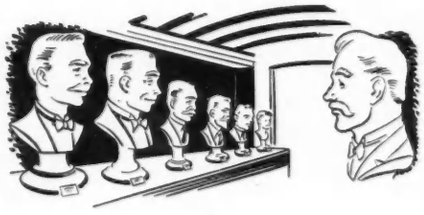
Ransom Olds you no doubt connect with Oldsmobile, but you should also link his name with . . .

a. International Harvester
b. Mack
c. Reo
d. Diamond T

8.

Chief contender with the Duryea auto as being the first American-made car was one built by honored-guest Edgar Apperson and his brother Elmer for . . .

a. Carl Benz
b. Elwood Haynes
c. Horace Dodge
d. John Maxwell



9.

Charles W. Snyder entered the Automotive Hall of Fame as a representative of . . .

a. pioneer car dealers
b. pioneer car buyers
c. pioneer road builders
d. pioneer oil refiners

10.

We close our quiz with a matching test that takes in all the others who were honored at the Golden Jubilee Celebration.

a. John Zaugg—1. early carburetor maker.

b. Wm. C. Durant—2. founder of Chevrolet.

c. Alfred P. Sloan—3. General Motors Board Chairman.

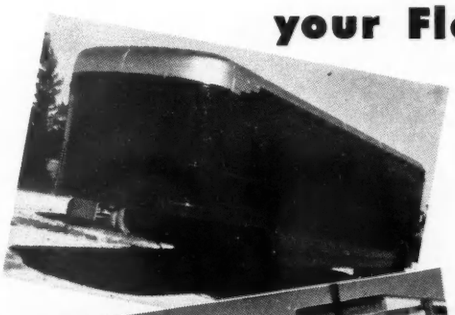
d. John van Benschoten—4. pioneer auto dealer.

e. George M. Holley—5. veteran employe for White Motor Co.

Yours for Service

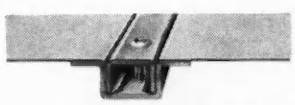
ALAN WADDELL

your Florida LS *Jim**



Ample facilities, long experience, and organized production systems, assure efficient handling of your LS truck body jobs at the Miller Sales Company plant, at Bradenton, Florida. And the resourcefulness and friendly service of your Florida LS Jim, Alan Waddell,' vice-president of Miller, is known all over the state. He can meet your exact design requirements and provide all the advantages resulting from the mass production of Lindsay Structure.

That is the advantage of the LS plan. All over the country 192 "LS Jims" are located where you need them for new bodies or for service. And only in their LS bodies can you get the combination of individualized design, all-metal construction, high strength-weight ratio, and quick repair features that mean increased hours on the road and reduced operating costs. **The Lindsay Corporation, Adams-Franklin Bldg., Chicago 6, Ill.; 60 E. 42nd St., New York 17, N. Y.; or Lindsay Structure (Canada) Ltd., Dominion Square Building, Montreal.**



Lindsay Structure, with its "pretensed sheets," achieves extraordinary strength and lightness.

* "Jim," a neighbor of yours, was chosen an LS body builder because of his ability to handle your requirements intelligently—whether you need one or a thousand truck bodies.

LINDSAY LS STRUCTURE

REG. U. S. PAT. OFF.

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending

DISTRIBUTORS AND BUILDERS THROUGHOUT THE COUNTRY

. . . FLEET DSCOUNTS

(CONTINUED FROM PAGE 45)

Dealers Offer 10%-20%

DISCOUNTS given by dealers are largely a matter of negotiation between buyer and seller. There appears to be no uniform rate, but it generally ranges between 10 and 20 per cent, with the higher figure applying to larger units. The factories do not require dealers to give discounts, although they may recommend that they do so under certain conditions. Some of the companies polled said that their dealers are not giving discounts on either cars or trucks, except in cases where they are required to do so under OPA regulations. Others report that dealers still are given prewar discounts.

The important thing is that, so far, manufacturers have not altered discount policies and many dealers have followed suit. Also, it is the opinion of the manufacturers that those dealers who are not now giving discounts will again give them as soon as production shows signs of meeting demand and that the prewar practices of discounts on new price or over-allowance on trade-ins will show up.

Distribution Methods Also Vary

METHODS of distributing vehicles to old fleet customers also vary between companies. Fargo Div. of Chrysler Corp., which handles fleet sales, and Ford allocate on an historical basis. First the company determines what percentage of a fleet operator's vehicles were purchased from the company prewar. This is then used as a factor in determining what percentage of available production the user is entitled to buy. Chevrolet is not using this method, but is allocating its vehicles to dealers on their historical sales record and allowing them to make an equitable distribution among fleet operators in their territories.

Fleet Service to be Extended

MOST manufacturers are planning to broaden the base of their fleet service departments. While this phase has not been particularly neglected in past years, it now is to assume even more importance. Some companies plan to concentrate on more numerous service facilities in order to make repairs and parts more readily accessible. Others, such as Chevrolet, are developing fleet activities of considerable scope.

The Chevrolet Fleet Service organization goes directly into the fleet owners shop to work out difficulties. A check analysis is made of a group of vehicles to see what is causing the trouble. If the trouble is caused by faulty maintenance, the shop crew is given service instruction and a maintenance program is set up for the operator. Sometimes the trouble is due to bad driver habits, and this is corrected by working with the driver. Even when the maintenance is taken care of outside the fleet owners' shops, the service organization will work with the dealer or independent repair shop to locate difficulties and institute corrective practice. Ford, Dodge, Studebaker and other large companies have variants of this fleet activity in operation.

END

(Please resume your reading on P. 46)

Yes Sir! Anyway You Look at it...

MEYERCORD TRUCK DECALS will do a lasting low-cost advertising job!

Utilize the *free* advertising space on the tops, sidepanels, visors, backs and cab doors of *your* trucks...with weather-tested Meyercord Truck Decals. They're durable, washable, easily applied.

This modern method of truck decoration and lettering is economical to use for a dozen trucks or a thousand! Products, trademarks, slogans can be reproduced in any size, color or design at a fraction of handpainting time and cost. Overnight speed of application of Meyercord Truck Decals keeps your trucks "on the street". Investigate this modern method of truck decoration...for your new fleet. Designing service free. Please address all your inquiries to Department 32-8.

FREE! TRUCK VISUALIZER

Contains helpful hints on lettering, decorating; with outline diagrams for experimental designing of many body types—from panel deliveries to vans and tank trucks. Send for your free copy... TODAY!

THE MEYERCORD CO., 5323 WEST LAKE STREET • CHICAGO 44, ILLINOIS

WASHINGTON RUNAROUND

Effect of New OPA Bill . . . Trucks Output Gets June Jolt . . . Trailer Materials Tight . . . Tire Goals Assured . . . Battery Quotas Down . . . Johnson for Wheeler . . . . Credit Rules Eased . . . Site Sales Slump . . .

by GENE HARDY
CCJ Washington Bureau

Effect of New OPA Bill

The revived OPA, as it affects the trucking industry, is very little different from the original extension act vetoed by the President. The most important change requires the calculation of ceilings using 1940 as the base year, rather than the old 1936-39 base. The base period under the vetoed bill would have been 1941. Legal prices are not likely to rise as much under the new bill as under the vetoed legislation.

Shortly after the extension was signed by the President, OPA announced the rolling back of most prices to June 30 levels, and was prepared to take full advantage of the 60 days allowed before acting on industry petitions for higher prices based on 1940 data.

Decontrol and price increase actions scheduled before June 30 were quickly revived by OPA. Additional decontrol actions were expected as a result of the creation of the Price Decontrol Board, which is all-powerful in regard to lifting ceilings. If OPA denies an industry petition for decontrol an appeal can be made to the board. The board's decision is final and cannot be overruled.

On individual items, the situation shapes up something like this:

Trucks and Trailers

MOTOR VEHICLES—Prices will rise if the 1940 formula is applied. Meanwhile, OPA is expected to go ahead with immediate issuance of truck prices under the reconversion order, MPR 610—recalculation of ceilings will have to wait until the industry presents accurate data on 1940 operations. Some of this information is already in OPA hands.

The new bill outlaws cost absorption on cars and trucks until unit sales for a period of six months reach the annual average unit sales for the years 1939 and 1941. But there is little likelihood that OPA will require any absorption before it expires next June 30.

TRUCK TRAILERS—OPA has already issued its delayed order upping trailer prices 8.6 per cent. Cost absorption will not be required. Further price boosts will have to wait for 1940 figures from the industry. At the same time price controls were dropped on certain specialized trailers, comprising about 27 per cent of the industry's output.

Decontrol of all trailer prices within a few months is likely.

Parts, Tires, Gas & Oil

REPLACEMENT PARTS—This situation is "intolerable" by OPA's own definition. A substantial price boost is likely to be the first move. With production increasing steadily, controls will be dropped by the end of the year.

PETROLEUM AND PETROLEUM PRODUCTS—These commodities are decontrolled in the extension law, unless the Price Decontrol Board certifies that supplies are insufficient to meet domestic demand.

"Hello, Ajax Construction Co.? About that green lumber you used in my new house . . . "

TIRES—CPA will recommend lifting of price controls on tires from 8.25 and up early next month. A similar move in regard to all other sizes is expected before the year's end.

BATTERIES—Controls will remain, due to the ever-tightening situation on replacement batteries.

SERVICE AND TRANSPORTATION CHARGES—The 1940 base also applies here, and increases are likely. However, OPA is giving consideration to the early decontrol of contract carrier rates.

Truck Output Gets June Jolt

Production forecasts in Washington are almost as variable as the weather in the Nation's capital. Last month's optimism over truck output has faded. Production in June amounted to 58,739 units, 15,911 less than May. Light trucks showed the only gain with an increase of 3665 units over the May total of 32,400. Production of 18,608 mediums was less than half the May output. Light-heavy and heavy-heavy production dropped to 3053 and 1013 units, respectively.

The drop in truck production was due primarily to the slump at Ford, Chevrolet and Dodge. The White, Diamond T and Mack work stoppages were also a contributing factor. Late in July the ICC ordered the unloading of 58 boxcars of truck parts and components consigned to Diamond T ton the grounds that the cars were being held up too long.

July Goal 111,791

Most materials are on a touch-and-go basis, including pig iron (the biggest bottleneck at present), spring wire, copper, silver and lead. Reinstitution of ratings for steel under PR 28 will help some component suppliers.

While the industry expected production of 111,791 trucks and 256,125 passenger cars in July, CPA said that July output might possibly exceed that of May, but not by many units.

(TURN TO PAGE 84, PLEASE)

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 82)

Trailer Materials Tight

Truck-trailer output continues favorably, but materials are tight. The plywood situation is easing slightly and a CPA official told CCJ that the "ingenuity of the industry in substituting for softwood plywood is to be applauded by all trailer users." The castings shortage, which can be traced to the pig iron situation, is the biggest headache confronting trailer producers.

Tire Goals Assured

Tire production goals will be met. Unless the industry is closed down by strikes, the situation will continue to improve. The recent surprise action increasing the natural rubber content of all tires came six months earlier than CPA had originally contemplated, because of the shortage of synthetic rubber. The increased amounts could have been greater, but CPA wanted to fix the percentages at a level which will make it certain that no reduction will have to be made in the future. Further increases, particularly for passenger car sizes, are not likely until next year.

Battery Quotas Down

The replacement battery outlook remains gloomy. Third quarter quotas of lead for replacement batteries were set at 19 per cent of the amount of lead used for civilian batteries in 1944. The second quarter quota was 22 per cent of the base period. Battery manufacturers who had to appeal for additional lead in the second quarter will receive the 19 per cent, plus 86 per cent of the amount of lead which they received under appeals. Other battery manufacturers, who have been receiving their lead only through appeals to CPA, will obtain in the third quarter 86 per cent of the amount of lead which they received in the second quarter.

Johnson for Wheeler

The defeat of Sen. Burton K. Wheeler, D., Mont., means that a new chairman will take over the Senate Interstate Commerce Committee after the new Congress is seated. The most likely candidate is Sen. Edwin C. Johnson, D., Colo., provided the Democrats retain their majority. Actually, the next in line for the job is Sen. Alben W. Barkley, D., Ky., but his duties as majority leader will prevent him from taking the post. Sen. Johnson is described as a moderate, middle-of-the-roader, whose primary interest lines in the realm of the military. Conservative by nature, he will not display the crusading tactics so ably practiced by Sen. Wheeler.

FBI Eyes Hijacking

Watch for an intensive FBI drive on hijacking if the alarming upward trend in trucking thefts continues. The scarcity of many types of consumer items is largely accountable for the increase.

Surplus Truck Distribution

Commercial purchasers accounted for 1715 surplus trucks sold during June out of a total of 11,795. During that month Federal agencies acquired 948, state and local governments 374, and veterans 8745.

Gas Turbine for Tanks

Army Ordnance is proceeding with the development of automotive engines that will have twice the power of those used in World War II. The application of the gas turbine to heavy tanks is under consideration. Future engines, and improved transmissions such as the cross-drive that will permit a tank to turn in its own length, are expected to revolutionize the performance of tracked vehicles.

Credit Rules Eased

Installment sales of automobiles and all other products have been freed from government credit regulations, provided the principal amount of the sale is over $1,500. Another amendment to Regulation W, the Federal Reserve order controlling consumer credit, removed all credit restrictions on the following items: automobile batteries and accessories, and automobile tires and inner tubes.

(TURN TO PAGE 196, PLEASE)

FACTS FOR FLEETS ON POSTWAR PAINTS

(CONTINUED FROM PAGE 44)

solvents are added, usually a blend of aromatic and aliphatic hydrocarbons. Pigments, ground in the resin solution, are applied for color, hiding, and also for durability. Of the pigments, titanium dioxide, toluidine red, carbon-black and chrome green are the most generally used. The desired flexibility is usually obtained by the selection and amount of oil incorporated in the alkyd resin.

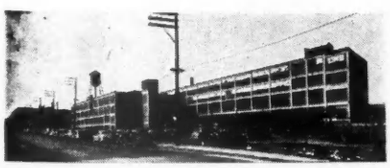
Fact 7: Lacquers from Cotton

THE basic ingredient of the lacquer is nitrocellulose or pryoxylin which is made from cotton linters—cotton fibres too short for spinning—treated with nitric acid in the presence of sulphuric acid. Cotton linters, as we have seen, above and as we know from the shortage of shirts is also on the scarce item list.

To this are added oils, solvents, and pigments in much the same manner and for the same function as in the case of the alkyd resins. The exact selection of products, however, may vary widely.

Fact 8: Alkyd Best for Shop

WE ALSO put the question of shop and shop equipment repainting up to the manufacturers, and learned that although there was much to be said for the new water mix and oil base wall paints, where hard usage was not expected, the alkyd resins still were tops for the automotive shop where greasy conditions and frequent washings were expected. This applied to both wall surfaces and machines, for the durable characteristics of this type finish were just as beneficial to the shop as on the truck or passenger car.



Exterior view of The Timken-Detroit Axle Co.'s newly acquired Trailer Axle Plant. Consists of 5 buildings devoted exclusively to machining and assembling axles and brakes for the trailer industry

The manufacturers have made excellent progress on color schemes, however, and at least one large manufacturer has a definite program of standardized colors for industries. Red, for instance, is reserved for fire fighting equipment, green for first aid, yellow for caution and so on. And along with it there is a trend toward using the new luminous paints of the fluorescent or phosphorescent types in certain specialized applications. We hope to have more on that in a forthcoming issue.

Fact 9: Get the Facts

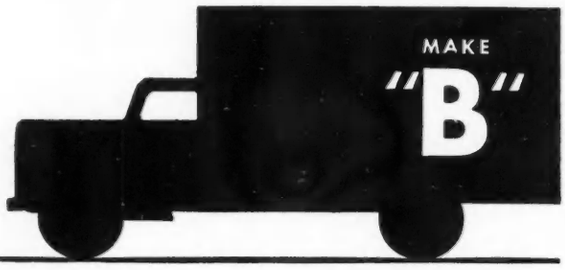
IN painting as in nearly every field a little knowledge can be a dangerous thing. All the big producers maintain a staff of competent field engineers. One of their most useful jobs is to see that you get good results from your painting activities, whether you do it in your own shop, or farm it out. It is just a matter of good common sense to call on them for their advice.

END

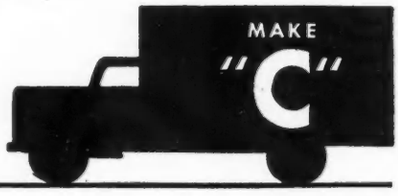
(Please resume your reading on P. 45)

HERE'S IMPARTIAL PROOF MACKS LAST LONGEST!

1. FACT: *14% of all Mack Trucks on the road today were built before 1929... every seventh Mack is over 16 years old.*



2. FACT: *Closest runner-up, make "B" has only 10.3% trucks on the road with 16 years service to their credit.*



3. FACT: *Make "C" has only 7.8% trucks now in use 16 years.*

4. FACT: *Make "D" has only 6.6% of their trucks still operating after 16 years.*

(The basic figures are from the latest authoritative national survey of truck registrations, by R. L. Polk & Co.)

MORE Mack Trucks are still rolling profitably for owners—years after they've paid for themselves in dependable service—than any other make.

Mack
TRUCKS
FOR EVERY PURPOSE

Performance Counts!

Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts.

TRUCK SPECIFICATIONS TABLE

OF 1946 PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

KEY TO DEFINITIONS, REFERENCES AND ABBREVIATIONS

DEFINITIONS

MAKE AND MODEL
Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) **International Harvester**—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

Also the company reserves the privileges of assigning special gross vehicle ratings for any chassis providing in the opinion of our engineering department, the type of service justifies the new rating without decreasing the safety factor designed into the truck.

(a)—Available with Eaton Two-Speed Axle designated KS Models.

(b) Current models will include, at additional cost, certain items not considered standard equipment. These items are included in the specifications and are listed below—Model K-3, oversize transmission; Model K-6, K-7 and K-6-F, oversize brakes; Model K-8, oversize engines and brakes; Model K-10, oversize engine, transmission and brakes; Model KR-11, oversize engine and transmission; Models K-8F and K-11-F, oversize engine and brakes.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken.
Tw—Timken-Westinghouse
TW—Timken-Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.
WW—Westinghouse or Wagner

(Turn to Next Page, Please)

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry.
c—Cast iron.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
F—Full-floating.
Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-Floating
T—Torque Tube

Gear Ratios

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

(Confined from Page 89)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive ℄ Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Available																														
2	.....CS200-SP		126	133	15000		7.00/20D	7.50/20	Wau 6BM	6–3½x4¼	263	5.9	180	78–2800	7–2¼x10¼	N	WG T9	4	Tim 53440H	SF	H	** –6.67	Tim 32502H	L4IH			a	TX	Opt	10x3x¼	T
3	.....C-250-SP		105		18000		7.50/20D	8.25/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 54411H	SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
4	.....CS-250-SP		105		20000		8.25/20D	9.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 54411H	SF	R	6.83–7.4	Tim 32502H	L4IH	334	583	a	TX	Opt	10x3x¼	T
5	.....CS-400-LSP		105		21500		9.00/20D	10.00/20	Wau 6BZ	6–4x4¼	320	5.9	210	95–2500	7–2½x10¼	N	Fu 5A330	5	Tim 56410H	SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
6	.....CS-500-SP		105		22000		9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 56410H	SF	R	6.83–7.4	Tim 35000H	L4IH	334	583	a	TX	Opt	12x3x¼	T
7	.....CS-550-SP		105		24000		9.00/20D	10.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 58300H	SF	R	6.83–7.4	Tim 35000H	L4IH	380	660	a	TX	Opt	12x3x¼	T
8	.....CS-550-SPX		112		32000		10.00/20D	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.9	286	112–2500	7–2½x12½	Y	Fu 5F430	5	Tim 8200H	2F	R	** –7.84	Tim 26450H	L4IH	570	1051	a	TX	Opt	14x3x⅞	T
9	.....CS-600		Opt	Opt	36000		11.00/20	11.00/24	Wau 6SRKR	6–4⅛x5⅛	517	5.9	365	125–2300	7–2½x12½	Y	Fu 5F430	5	Tim 8200PA	2F	R	** –7.84	Tim 27452TW	L4IH	722	1051	a	TX	Opt	14x3x⅞	T
10	.....CS-600-SP		Opt	Opt	40000		11.00/20	11.00/24	Wau 145GK	6–5¼x6	779	5.6	590	186–2000	7–3½x17¾	Y	Spi 78418[v]	5	T SW3012PA	2F	R	6.42–7.84	Tim 27452TW	L4IH	722	1051	a	TD	Opt	14x3x⅞	T
11	(D)CS-600-SP.Opt.		Opt	Opt	40000		11.00/20	11.00/24	Cum HB600	6–4¼x6	672	17.	510	150–1800	7–4½x16½	Y	Spi 78418[v]	5	T SW3012PA	WF	R	** –6.16	Tim 27452TW	L4IH	....	....	A	TD	Opt	14x3x⅞	T
12	Chevrolet.....DP		115	115	4600	2362	6.00/16S	15S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	3	Own	Hy	T	** –4.11	Own	O4IH	164	242	Co	2I	38¼	5¼x2¼x⅝	C
13	.....DR		125	125	5800		15S	7.00/17S	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	3	Own	HyF	H	** –4.57	Own	O4IH	183	272	Co	2I	48½	5½x2¾x⅝	C
14	.....DS		134	134	8800		7.00/17S	7.00/18	O-Thrift Mas.	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	57¾	7x2¾x⅞	C
15	.....PJ		134	134	†13000		7.00/20S	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅞	C
16	.....PK		160	160	†13000		7.00/20S	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	N	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅞	C
17	(School bus)..PL		160	160	12000		6.50/20D	7.00/20	O-Thrift Mas.*	6–3½x3¾	216	6.5	174	90–3300	4–2¾x5⅛	Y	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	....	7x2¾x⅞	P
18	.....PVS		134	134	14000		7.50/20D	7.50/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	5.43	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅞	P
19	.....PWS		160	160	14000		7.50/20D	7.50/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅞	P
20	(c.o.e.).....PP		109	109	16000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	62½	7x2¾x⅞	P
21	(c.o.e.).....PR		132	132	16000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	86	7x2¾x⅞	P
22	(c.o.e.).....PS		158	158	16000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	189	90–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	111½	7x2¾x⅞	P
23	.....PV		134	134	15000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	57¾	7x2¾x⅞	P
24	.....PW		160	160	15000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	6.17	Own	O4IH	330	478	Co	2I	83¼	7x2¾x⅞	P
25	(School bus) .PX		195	195	15000		7.50/20D	8.25/20	O-Load Mas.	6–3⅞x3¾	235	6.6	192	93–3100	4–2¾x5⅛	Y	Own	4	Own	HyF	H	** –6.17	Own	O4IH	330	478	Co	2I	.....	7⅛x2¾x3¼x⅞	P
26	Corbitt (T)..18TG		137	137	18000	z7200	9.00/20	10.00/20	Con M6330	6–4x4¼	330	5.7	240	102–2800	7–2¼x12	Y	Fu 5A330	5	Tim 56410PA	SF	H	** –6.17	Tim 32502TW	Ws4IA	....	744	a	TX	60½	7¼x3¼x⅞	T
27	(T).....22TG		145	145	22000	z8500	10.00/20	10.00/22	Con B6427	6–4⅛x4½	427	6.1	332	127–2600	7–2½x13½	Y	Fu 5A43	5	Tim 58300PA	SF	H	** –5.25	Tim 35000TW	Ws4IA	....	847	a	TX	60½	8x3¼x⅞	T
28	(T).....25TG		148	148	25000	z9600	10.00/22	11.00/22	Con R6513	6–4⅞x5⅝	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A620	5	Tim 58415PA	SF	H	** –6.14	Tim 35100TW	Ws4IA	....	946	a	2	60½	8½x3¼x⅞	T
29	(T).....28TG		148	148	28000	z9800	10.00/22	11.00/24	Con R6602	6–4⅞x5⅝	602	6.0	460	185–2600	7–3¾x14½	Y	Fu 5A650	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	60½	8½x3¼x⅞	T
30	(D) (T)...22TD		145	145	22000	z8700	10.00/20	10.00/22	Her DWXD	6–4¼x4¾	404	...	330	146–2600	7.....		Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA	....	847	a	TX	60½	8x3¼x¼	T
31	(D) (T)...25TD		148	148	25000	z9800	10.00/22	11.00/22	Her DRXC	6–4⅝x5¼	529	...	400	140–2000	7–3½x13¾	Y	Fu 5A620	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35100TW	Ws4IA	....	946	a	2	60½	8½x3¼x⅞	T
32	(D) (T)...27TD		152	152	27000	z10000	10.00/22	11.00/24	Cum HB6	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 5A420	5	Tim 58415PA	SF	H	** –5.14	Tim 26450W	Ws4IA	....	1055	a	2	60½	8½x3¼x⅞	T
33	(D) (T)...28TD		155	155	28000	z10400	10.00/22	11.00/24	Cum NHB6	6–5½x6	742	...	575	200–2100	7.....		Fu 5A920	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	60½	8½x3¼x⅞	T
34	.....18BG		137	Opt	18000		9.00/20	10.00/20	Con M6330	6–4x4¾	330	5.7	240	102–2800	7–2½x12	Y	Fu 5A330	5	Tim 56410H	SF	H	** –6.17	Tim 32502H	L4IHV	....	578	a	TX	.....	8x3¼x¼	T
35	.....22BG		145	Opt	22000		10.00/20	10.00/22	Con B6371	6–4⅛x4⅝	371	5.7	280	100–2500	7–2½x13½	Y	Fu 5A430	5	Tim 58300H	SF	H	** –6.14	Tim 35000H	L4IHV	....	660	a	TX	.....	8x3¼x¼	T
36	.....25BG		148	Opt	25000		10.00/22	11.00/22	Con B6427	6–4¼x4½	427	6.1	332	127–2600	7–2½x13½	Y	Fu 5A430	5	Tim 58415PA	SF	H	** –6.14	Tim 35100TW	Ws4IA	....	946	a	TX	.....	8½x3¼x⅞	T
37	.....28BG		148	Opt	28000		11.00/22	11.00/24	Con R6513	6–4½x5½	513	5.9	400	165–2600	7–3¼x14½	Y	Fu 5A620	5	Tim 8200PA	2F	H	** –6.42	Tim 26450W	Ws4IA	....	1159	a	TD	.....	8½x3¼x⅞	Tf
38	(D).....18BD		137	Opt	18000		9.00/20	10.00/20	Her DJXC	6–3¾x4½	298	...	208	83–2600	7–3x10⅛	Y	Fu 5A330	5	Tim 96710PA	dF	H	6.08–8.12	Tim 32502TW	Ws4IA	....	744	a	TX	.....	8x3¼x¼	T
39	(D).....25BD		148	Opt	25000		10.00/22	11.00/22	Her DWXD	6–4¼x4¼	404	...	330	146–2600	7.....		Fu 5A430	5	Tim 98415PA	dF	H	6.53–8.53	Tim 35000TW	Ws4IA	....	847	a	TX	.....	8½x3¼x⅞	T
40	Diamond T.404HH		139	175	14700	5000	8.25/20D	8.25/20	Her CBJXE	6–3¼x4¼	245	5.7	174	77–2800	7–2½x10½	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	522	A	TX	60	8½x3½x¼	T
41	509		139	175	14700	5200	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2½x10½	Y	WG T9A	4	Eat A35-1350	SF	H	Dual Rge.	Cla F450	L4IHV	363	....	A	TX	60	8½x3½x¼	T
42	.....509SC		106	151	14700	5300	8.25/20D	8.25/20	Her CBJXC◆	6–3¾x4¼	282	5.9	214	86–2800	7–2½x10½	Y	WG T9A	4	Eat A7-1350	SF	H	Dual Rge.	Cla F452	L4IHV	363	....	A	TX	60	8½x3½x¼	T
43	.....614II		139	175	18800	6200	9.00/20△	9.00/20△	Her CBJXD	6–4x4¼	320	5.9	228	96–2800	7–2½x10½	Y	Cla 250V	5	Eat A34-18000	SF	H	Dual Rge.	Cla F450	L4IHV	481	....	A	TD	60	8½x3½x¼	T
44	(T).....702		130	142	23000	8200	10.00/20D	10.00/20	Her WXLC-3	6–4¼x4¾	404	5.9	300	114–2800	7–2½x13¼	Y	Cla 270V	5	Eat A30-18001	SF	R	Dual Rge.	Tim 35100TW	Ws4IA	618	....	A	TD	60	10x3½x¼	T
45	(T).....806II		154	190	28000	9400	11.00/20D	11.00/20	Her WXLC3	6–4¼x4¾	404	5.9	300	114–2800	7–2½x13¼	Y	Spi 6241-6031	12	Tim U200P	SF	R	** –7.84	Tim 35100TW	Ws4IA	722	....	A	TD	84	10¼x3½x⅞	T
46	900		154	154	30000	10000	10.00/22D	10.00/22	Her RXLC	6–4⅝x5¼	529	5.4	365	132–2100	7–3½x13¼	Y	Spi 6241-703	12	Tim U200P	2F	R	** –7.08	Tim 36021TW	Ws4IA	722	....	A	TD	84	10¼x3½x⅞	T
47	(D)(T).....910		172	172	36000	12300	10.00/22D	10.00/20	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16¾	Y	Spi 7851, 703	15	Tim U200P	2F	R	** –7.08	Tim 36021TW	Ws4IA	722	....	A	TD	90½	10¼x3½x⅞	T
48	Dodge.....WC		116	116	4600		6.00/16	6.50/16S	Own T-112	6–3¼x4¾	217	6.8	172	95–3600	4–2½x4.8	N	NP	3	Own	HyS	H	3.73–4.78	Own	O4IH	174	264	Co	TX	40⅛	6⅛x2¼x⅞	C
49	.....WD-15		120	120	5200		TA-15	TA-15S	Own T-114	6–3¼x4¾	217	6.8	172	95–3600	4–2½x4.8	N	NP	3	Own	HyS	H	3.78–4.78	Own	O4IH	183	276	Co	TX	44⅛	6⅛x2⅛x⅞	C
50	.....WD-20		120	120	6400		6.50/16▲	6.00/20	Own T-116	6–3¼x4⅝	230	6.7	184	102–3600	4–2½x4.8	N	NP	3	Own	HyF	H	3.90–4.89	Own	O4IH	197	294	Co	TX	44⅛	6⅛x2⅛x⅞	C
51	.....WD-21		120	120	6400		6.50/16▲	6.00/20	Own T-116	6–3¼x4⅝	230	6.7	184	102–3600	4–2½x4.8	N	NP	3	Own	HyF	H	3 90–4.89	Own	O4IH	197	294	Co	TX	57⅛	6⅛x2⅛x⅞	C
52	.....WF-21		135	135	9500		6.00/20‡	6.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	60	7x2¾x.21	C
53	.....WF-22		160	160	9500		6.00/20‡	6.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	84⅛	7x2¾x.21	C
54	.....WF-31		135	135	13500		6.00/20‡	7.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	60	7x2¾x.21	C
55	.....WF-32		160	160	13500		6.00/20‡	7.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	84⅛	7x2¾x.21	C
56	.....WF-33		190	190	13500		6.00/20‡	7.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	114⅛	7⅛x2⅜x¼	C
57	.....WF-34		178	178	13500		6.00/20‡	7.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	102⅛	7⅛x2⅜x¼	C
58	.....WF-36		200	200	13500		6.00/20‡	7.50/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	124⅛	7⅛x2⅜x¼	C
59	.....WFA-31		135	135	14000		6.00/20‡	8.25/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	60	7x2¾x.21	C
60	.....WFA-32		160	160	14000		6.00/20‡	8.25/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	84⅛	7x2¾x.21	C
61	.....WFA-33		190	190	14000		6.00/20‡	8.25/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	114⅛	7⅛x2⅜x¼	C
62	.....WFA-34		178	178	14000		6.00/20‡	8.25/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	102⅛	7⅛x2⅜x¼	C
63	.....WFA-36		200	200	14000		6.00/20‡	8.25/20	Own T-118	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	124⅛	7⅛x2⅜x¼	C
64	.....WFM-35		105	105	13500		6.00/20‡	7.50/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	60	7x2¾x⅞	C
65	.....WFM-37		129	129	13500		6.00/20‡	7.50/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	84	7⅛x2⅜x⅞	C
66	.....WFM-38		159	159	13500		6.00/20‡	7.50/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Own	HyF	H	5.11–6.83	Own	O4IH	284	437	C	TX	114	7⅛x2⅜x⅞	C
67	.....WFMA-35		105	105	14000		6.00/20‡	8.25/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	60	7x2¾x⅞	C
68	.....WFMA-37		129	129	14000		6.00/20‡	8.25/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	84	7⅛x2⅜x⅞	C
69	.....WFMA-38		159	159	14000		6.00/20‡	8.25/20	Own T-128	6–3⅞x4¼	236	6.6	192	109–3600	4–2½x5.0	N	NP	4	Eat	SFd	H	Dual Rge.	Own	O4IH	284	437	C	TX	114	7⅛x2⅜x⅞	C
70	.....WG-40		136	136	15000		6.00/20	8.25/20	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	60⅛	8⅛x2⅜x⅞	C
71	.....WG-41		148	148	15000		6.00/20	8.25/20	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	72⅛	8⅛x2⅜x⅞	C
72	.....WG-42		160	160	15000		6.00/20	8.25/20	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	84⅛	8⅛x2⅜x⅞	C
73	.....WG-43		178	178	15000		6.00/20	8.25/20	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	102⅛	8⅛x2⅜x⅞	C
74	.....WG-44		220	220	15000		6.00/20	8.25/20	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	144⅛	8⅛x2⅜x⅞	C
75	.....WGA-40		136	136	16000		6.00/20	8.25/20°	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	60⅛	8⅛x2⅜x⅞	C
76	.....WGA-41		148	148	16000		6.00/20	8.25/20°	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	72⅛	8⅛x2⅜x⅞	C
77	.....WGA-42		160	160	16000		6.00/20	8.25/20°	Own T-120	6–3⅞x4½	250	6.6	204	114–3600	4–2½x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	84⅛	8⅛x2⅜x⅞	C

x Weight of complete truck tractor less fifth wheel. Chevrolet own rear axle (6.17:1) available at extra cost on Models PJ-PK-PL. Chevrolet own 2-speed rear axle (6.03-7.99:1) available at extra cost on Models PVS-PWS-PP-PR-PS-PV-PW. † Max. gross vehicle weight can only be obtained by adding regular production options (at extra cost). △ With Spi 703A with 3 forward speeds.
‡ Front only; Rear 6.50/20S ◆ Or CBJXB 6–3¾x4¼ ° Rear 9.00/20D ▲ Rear 7.00/16S △ Front only; rear 10.00/20D * Own Loadmaster engine available on models PJ-PK-PL at extra cost.

(Turn to Page 92, Please)

but 26 basic designs

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GOOD piston rings must provide oil control, certainly! But they can't stop there! Blow-by control, low friction, minimum wear —all these are "musts," too. Sealed Power Individually Engineered Ring Sets provide *all four*—for BALANCED PERFORMANCE. Each set is made up from twenty-six (26) basic designs of piston rings. Whatever the make, model or cylinder wear condition, there's a Sealed Power Set specifically engineered to do the best possible job. Sealed Power has been refining these sets for seven years, has been producing rings for car, truck and engine builders 35 years. For balanced performance, re-power with Sealed Power motor parts. Sold by leading distributors through franchise dealers. Sealed Power Corporation, Muskegon, Michigan and Stratford, Ontario.

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SEALED POWER PISTON RINGS

BEST IN NEW TRUCKS! ★ BEST IN OLD TRUCKS!

(Continued from Page 90)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio, Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make, Location, Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Dodge....WGA-43		178	178	16000		6.00/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	C
2	Cont'd..WGA-44		220	220	16000		6.00/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	144 11/16	8 1/2 x2 11/16 x 3/8	C
3	.....WGM-40		105	105	15000		6.00/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	60	8 1/2 x2 11/16 x 3/8	C
4	.....WGM-42		129	129	15000		6.00/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	84	8 1/2 x2 11/16 x 3/8	C
5	.....WGM-43		159	159	15000		6.00/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	114	8 1/2 x2 11/16 x 3/8	C
6	.....WGMA-40		105	105	16000		6.00/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	60	8 1/2 x2 11/16 x 3/8	C
7	.....WGMA-42		129	129	16000		6.00/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	84	8 1/2 x2 11/16 x 3/8	C
8	.....WGMA-43		159	159	16000		6.00/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	114	8 1/2 x2 11/16 x 3/8	C
9	.....WH-45		136	136	15000		6.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	C
10	.....WH-46		148	148	15000		6.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	72 11/16	8 1/2 x2 11/16 x 3/8	C
11	.....WH-47		160	160	15000		6.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	C
12	.....WH-48		178	178	15000		6.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	C
13	.....WH-49		220	220	15000		6.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	144 11/16	8 1/2 x2 11/16 x 3/8	C
14	.....WHA-45		136	136	16000		6.50/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	C
15	.....WHA-46		148	148	16000		6.50/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	72 11/16	8 1/2 x2 11/16 x 3/8	C
16	.....WHA-47		160	160	16000		6.50/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	C
17	.....WHA-48		178	178	16000		6.50/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	C
18	.....WHA-49		220	220	16000		6.50/20	8.25/20*	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	144 11/16	8 1/2 x2 11/16 x 3/8	C
19	.....WHM-45		105	105	15000		6.50/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	60	8 1/2 x2 11/16 x 3/8	C
20	.....WHM-47		129	129	15000		6.50/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	84	8 1/2 x2 11/16 x 3/8	C
21	.....WHM-48		159	159	15000		6.50/20	8.25/20	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	5.11–7.16	Own	O4IHV	359	503	C	TX	114	8 1/2 x2 11/16 x 3/8	C
22	.....WHMA-45		105	105	16000		6.50/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	60	8 1/2 x2 11/16 x 3/8	C
23	.....WHMA-47		129	129	16000		6.50/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	84	8 1/2 x2 11/16 x 3/8	C
24	.....WHMA-48		159	159	16000		6.50/20	8.25/20*	Own T-130	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Eat	SFd	H	Dual Rge.	Own	O4IHV	391	609	C	TX	114	8 1/2 x2 11/16 x 3/8	C
25	.....WJ-55		136	136	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	6.80–7.20	Tim	T41HV	396	609	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	C
26	.....WJ-56		142	142	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	6.80–7.20	Tim	T41HV	396	609	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	C
27	.....WJ-57		160	160	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	6.80–7.20	Tim	T41HV	396	609	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	C
28	.....WJ-58		178	178	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	6.80–7.20	Tim	T41HV	396	609	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
29	.....WJ-59		235	235	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	6.80–7.20	Tim	T41HV	396	609	C	TX	159 11/16	8 1/2 x2 11/16 x 3/8	P
30	.....WJA-55		136	136	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	396	609	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	C
31	.....WJA-56		142	142	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	396	609	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	C
32	.....WJA-57		160	160	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	396	609	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	C
33	.....WJA-58		178	178	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	396	609	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
34	.....WJA-59		235	235	18000		7.50/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	225	115–3200	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	396	609	C	TX	159 11/16	8 1/2 x2 11/16 x 3/8	P
35	.....WK-65		136	136	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.40	Tim	T41HV	424	666	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	P
36	.....WK-66		142	142	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.40	Tim	T41HV	424	666	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	P
37	.....WK-67		160	160	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.40	Tim	T41HV	424	666	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	P
38	.....WK-68		178	178	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.40	Tim	T41HV	424	666	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
39	.....WK-69		196	196	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.40	Tim	T41HV	424	666	C	TX	120 11/16	8 1/2 x2 11/16 x 3/8	P
40	.....WKA-65		136	136	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	424	666	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	P
41	.....WKA-66		142	142	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	424	666	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	P
42	.....WKA-67		160	160	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	424	666	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	P
43	.....WKA-68		178	178	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	424	666	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
44	.....WKA-69		196	196	20000		8.25/20	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	424	666	C	TX	120 11/16	8 1/2 x2 11/16 x 3/8	P
45	.....WR-65		136	136	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.80	Tim	T41HV	480	770	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	P
46	.....WR-66		142	142	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.80	Tim	T41HV	480	770	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	P
47	.....WR-67		160	160	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.80	Tim	T41HV	480	770	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	P
48	.....WR-68		178	178	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.80	Tim	T41HV	480	770	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
49	.....WR-69		196	196	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	6.83–7.80	Tim	T41HV	480	770	C	TX	120 11/16	8 1/2 x2 11/16 x 3/8	P
50	.....WRA-65		136	136	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	480	770	C	TX	60 11/16	8 1/2 x2 11/16 x 3/8	P
51	.....WRA-66		142	142	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	480	770	C	TX	66 11/16	8 1/2 x2 11/16 x 3/8	P
52	.....WRA-67		160	160	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	480	770	C	TX	84 11/16	8 1/2 x2 11/16 x 3/8	P
53	.....WRA-68		178	178	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	480	770	C	TX	102 11/16	8 1/2 x2 11/16 x 3/8	P
54	.....WRA-69		196	196	23000		10.00/20*	10.00/20*	Own T-135	6–3 3/4 x5	331	6.5	270	128–3000	7–3x11.2	Y	NP	5	Tim	HyF	H	Dual Rge.	Tim	T41HV	480	770	C	TX	120 11/16	8 1/2 x2 11/16 x 3/8	P
55	Dodge (School Bus)																														
56	.....WF-32-S		160	160	14500		7.00/20	7.50/20	Own T-118	6–3 1/16 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.0	N	NP	4	Own	HyF	H	**–6.285	Own	O4IH	284	437	C	TX	84 11/16	7x2 1/4 x .21	C
57	.....WF-34-S		178	178	14500		7.50/20	7.50/20	Own T-118	6–3 1/16 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.0	N	NP	4	Own	HyF	H	**–6.285	Own	O4IHV	284	437	C	TX	102 11/16	7 1/4 x2 11/16 x 1/4	C
58	.....WF-36-S		200	200	14500		7.50/20	7.50/20	Own T-118	6–3 1/16 x4 1/4	236	6.6	192	109–3600	4–2 1/2 x5.0	N	NP	4	Own	HyF	H	6.28–6.83	Own	O4IHV	284	437	C	TX	124 11/16	7 1/4 x2 11/16 x 1/4	P
59	.....WH-49-S		220	220	16000		7.50/20	8.25/20	Own T-120	6–3 1/16 x4 1/2	250	6.6	204	114–3600	4–2 1/2 x5.0	Y	NP	5	Own	HyF	H	** –7.16	Own	O4IHV	359	503	C	TX	144 11/16	8 1/2 x2 11/16 x 3/8	P
60	.....WJ-59-S		235	235	18500		9.00/20	9.00/20	Own T-136	6–3 3/4 x4 1/4	282	6.5	.....	.....	7–3x11.2	Y	NP	5	Tim	HyF	H	** –7.2	Tim	T41HV	396	609	C	TX	159 11/16	8 1/2 x2 11/16 x 3/8	P
61	Duplex.....T		136	220	18000	6000	8.25/20	9.00/20	Her JXD	6–4x4 1/4	320	6.2	240	113–3000	7–2 1/2 x10 11/16	Y	Fu 5B330	5	Tim 56410	B	H	** –6.83	Tim 32502	L41HV	420	654	A	TX	59	9 1/2 x3 1/2 x 3/8	C
62	.....R		136	220	25000	8820	9.00/20	10.00/20	Her WXLC-3	6–4 1/2 x4 3/4	404	5.8	312	139–2600	7–2 5/8 x13 3/4	Y	Fu 5A43	5	Tim 98415	DF	R	6.53–8.53	Tim 35000	L41HV	730	1016	A	TX	79 1/4	9 1/4 x3 1/2 x 3/8	C
63	.....JHA		148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	121–2200	7–3x14	Y	Fu 5A620	5	Tim S-200P	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10 1/4 x3 1/2 x 3/8	C
64	.....KHA		148	220	32000	10500	11.00/20	11.00/20	Her RXC	6–4 1/2 x5 1/4	529	5.4	395	132–2300	7–3x14 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.81	Tim 26450	Ws4IA	912	1311	A	TX	79	10 1/4 x3 1/2 x 3/8	C
65	Federal.....16M		146	194	13500	4460	7.50/20	7.50/20	Her JXE	6–3 1/2 x4 1/4	245	6.5	180	87–3000	7–2 1/2 x10 11/16	N	WG T9	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L41HV	310	482	a	TX	67	8 1/2 x2 7/16 x 1/4	T
66	.....18M		146	194	15000	4700	8.25/20D	.....	Her JXBF	6–3 5/8 x4 1/4	263	6.5	189	93–3000	7–2 1/2 x10 11/16	N	WG T9	4	Tim 54412DP	SF	H	** –5.83	Tim 30003H	LT4IHV	314	532	a	TX	67	8 1/2 x2 1/8 x 1/4	T
67	.....18M2		146	194	15000	4830	8.25/20D	.....	Her JXBF	6–3 5/8 x4 1/4	263	6.5	189	93–3000	7–2 1/2 x10 11/16	N	WG T9	4	Tim 94440DP	dF	H	6.06–8.11	Tim 30003H	LT4IHV	314	532	a	TX	67	8 1/2 x2 1/8 x 1/4	T
68	.....29M		146	194	20000	5500	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	230	109–2800	7–2 1/2 x10 11/16	N	Cla 205V	5	Tim 56410DP	SF	H	** –6.83	Tim 32514H	LT4IHV	390	654	a	TX	67	8 1/2 x2 1/8 x 1/4	T
69	.....29M2		146	194	20000	5690	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	230	109–2800	7–2 1/2 x10 11/16	N	Cla 205V	5	Tim 96710DP	dF	H	6.07–8.12	Tim 32514H	LT4IHV	390	654	a	TX	67	8 1/2 x2 1/8 x 1/4	T
70	.....29MA		155	194	20000	5950	9.00/20D	.....	Her JXDF	6–4x4 1/4	320	6.5	230	109–2800	7–2 1/2 x10 11/16	N	Cla 205V†	5	Tim 58301DP	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/2 x2 1/8 x 1/4	T
71	.....45M		143	203	24000	7975	10.00/20D	10.00/22	Con B6427	6–4 1/16 x4 1/16	427	6.1	332	128–2600	7–2 1/8 x13 1/2	Y	Cla 270VO	5	Tim 58301P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10x3 1/2 x 1/4	•T
72	.....45M2		143	203	24000	8350	10.00/20D	10.00/22	Con B6427	6–4 1/16 x4 1/16	427	6.1	332	128–2600	7–2 1/8 x13 1/2	Y	Cla 270VO	5	Tim 98415P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10x3 1/2 x 1/4	•T
73	.....55M		143	203	27000	8600	11.00/20D	11.00/22	Con B6427	6–4 1/16 x4 1/16	427	6.1	332	128–2600	7–2 1/8 x13 1/2	Y	Cla 270VO	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	60 1/2	10x3 1/2 x 1/4	•T
74	.....55MA		155	203	27000	8880	11.00/20D	11.00/22	Con B6427	6–4 1/16 x4 1/16	427	6.1	332	128–2600	7–2 1/8 x13 1/2	Y	Cla 270V†	5	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72 1/2	10x3 1/2 x 1/4	•T
75	.....60MA		153	203	28000	9715	11.00/20	11.00/22	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–2400	7–2 3/4 x14 1/2	Y	Fu 5A65	5	Tim S200P	2F	R	** –7.08	Tim 36021TW	Tw4IA	722	1051	a	FX	72 1/2	10x3 1/2 x 1/4	T
76	.....60M2		143	203	28000	9690	11.00/20	11.00/22	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–2400	7–2 3/4 x14 1/2	Y	Fu 5A650	5	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TX	60 1/2	10x3 1/2 x 1/4	T
77	.....65M2		141	201	30000	10200	11.00/22	11.00/24	Con R6602	6–4 7/8 x5 5/8	602	5.7	460	184–2600	7–3 1/4 x14 1/2	Y	Fu 5A650	5	Tim 8300P	HyF	R	6.53–8.53	Tim 36000TW	Ws4IA	722	1051	a	TX	60 1/2	10x3 1/2 x 1/4	T

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† Main transmission; auxiliary, Brown-Lipe 6031, 3 forward speeds. ‡ For other than minimum standard WB–8 3/4 x2 3/4 x 1/4. • For other than minimum standard WB–10 1/2 x3 1/2 x 3/4.
‡ Rear 9.00/20D. * Rear 11.00/20D.

SMOOTH HORSEPOWER

CASITE GUARANTEES BETTER AND SMOOTHER PERFORMANCE OR *Double-Your-Money-Back*

● New or old—your motors will run better and last longer, with Casite.

Casite protects stiff new motors during the critical break-in period . . . gives older motors new smoothness, pick-up and power.

Casite carries oil quickly to the tight spots, reduces engine wear, retards formation of sludge and gum, *cleans motors—keeps them clean.*

For higher fleet efficiency and lower operating costs, keep Casite in all your motors all the time.

Use Casite in the crankcase every oil change and through the air intake of gasoline motors every three months—a pint for all passenger cars and small trucks; 10% of crankcase capacity for all others.

THE CASITE CORPORATION · HASTINGS, MICHIGAN

New Radio Show
"RIGHT DOWN YOUR ALLEY"
COAST-TO-COAST
AMERICAN BROADCASTING COMPANY

EVERY SUNDAY AFTERNOON

4:30 Eastern Daylight Time	2:30 Central Standard Time
3:30 Eastern Standard Time	1:30 Mountain Standard Time
3:30 Central Daylight Time	12:30 Pacific Standard Time

WHAT CASITE DOES

- **Carries oil to the tight spots.**
- **Protects motor during break-in period.**
- **Reduces formation of sludge and gum.**
- **Frees sticking valves and rings.**
- **Gives Better and Smoother Performance all-year-round.**

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Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Sp'ds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
	Ford																														
1	Chs. Cowl.. 69C	♦720	114	114	4700	♦2360	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	.....	5.92x.15x2¼	CT
2	Chs. Windsid 69C	♦740	114	114	4700	♦2390	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	.....	5.92x.15x2¼	CT
3	Chassis Cab 69C	♦780	114	114	4700	♦2710	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	40▱	5.92x.15x2¼	CT
4	Pickup..... 69C	♦800	114	114	4700	♦3050	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	40▱	5.92x.15x2¼	CT
5	Stake..... 69C	♦905	114	114	4700	♦3170	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	40▱	5.92x.15x2¼	CT
6	Panel..... 69C	♦935	114	114	4700	♦3310	6.50/16	6.50/16	Own 59C-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 21C	3	Own 21C	S¾	H	**	–3.54	Own 21Y	O4IH	162	264	Co	2IM	.....	5.92x.15x2¼	CT
7	Sedan Divry 69C	♦990	114	114	4000	♦3050	6.00/16	6.50/16	Own 59A-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41A	3	Own 51A	S¾	tr	**	–3.54	Own 21A	O4IH	162	264	Co	2IM	.....	5.92x.15x2¼	xCT
8	Chs. Cowl.. 69Y	♦850	122	122	6600	♦2860	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	.....	6x.10x2¾	CT
9	Chs. Windsid 69Y	♦870	122	122	6600	♦2890	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	.....	6x.10x2¾	CT
10	Chassis Cab 69Y	♦945	122	122	6600	♦3220	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	48▱	6x.10x2¾	CT
11	Express..... 69Y	♦1000	122	122	6600	♦3690	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	.....	6x.10x2¾	CT
12	Stake..... 69Y	♦1025	122	122	6600	♦3835	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	.....	6x.10x2¾	CT
13	Panel..... 69Y	♦1115	122	122	6600	♦3920	7.00/17▽	7.00/17▽	Own 59Y-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 11Y	4	Own 21Y	SF	H	**	–4.85	Own 21Y	O4IH	187	308	Co	2IM	.....	6x.10x2¾	CT
14	Chs. Cowl.. 69T	♦865	134	134	12500	♦3990	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	7x.21x2¾	TL
15	Chs. Windsid 69T	♦885	134	134	12500	♦4020	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
16	Chassis Cab. 69T	♦960	134	134	12500	♦4330	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	60▱	6.6x.12x2.2	TL
17	Stake..... 69T	♦1095	134	134	12500	♦5310	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
18	Dump Chs. Cl. 69U	♦♦873	134	134	12500	♦3990	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
19	Dump Chs. W/s 69U	♦♦893	134	134	12500	♦4020	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
20	Dump Chs. Cb. 69U	♦♦968	134	134	12500	♦4335	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	60▱	6.6x.12x2.2	TL
21	Chs. Cowl 69T	♦890	158	158	12500	♦4070	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
22	Chs. Windsid.. 69T	♦910	158	158	12500	♦4100	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
23	Chassis Cab.. 69T	♦985	158	158	12500	♦4410	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.06	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	84▱	6.6x.12x2.2	TL
24	Stake..... 69T	♦1147	158	158	12500	♦5650	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
25	Sch. Bus.. 69T	♦884	158	158	13500	♦4090	7.50/20	8.25/20R	Own 594T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 01T	O4IH	303	506	Co	TX	.....	6.6x.12x2.2	TL
26	Sch. Bus.. 69T	♦995	194	194	14500	♦4260	7.50/20	8.25/20R	Own 594T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 81W	O4IH	303	506	Co	TX	60	7x.21x2¾	TL
27	(c.o.e.) Ch. C. 691W	♦1085	101	101	13500	♦4435	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 81W	O4IH	303	506	Co	TX	93	7x.21x2¾	TL
28	(c.o.e.) Ch. C. 69W	♦1105	134	134	13500	♦4570	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 81W	O4IH	303	506	Co	TX	117	6.6x.12x2.2	TL
29	(c.o.e.) Ch. C. 698W	♦1130	158	158	13500	♦4645	7.50/20	8.25/20R	Own 59T-V8	8–3⅛x3¾	239	6.7	180	100–3800	3–2½x4.96	N	Own 41T	4	Own 01T	SF	H	**	–6.66	Own 81W	O4IH	303	506	Co	TX		6.6x.12x2.2	TL
30	Hudson (¾T. Pkp)	.....	128	128	4810	.....	6.50/16-6	6.50/16-6	Own 58	6–3x5	212	6.5	168	102–4000	3– ▲▲	N	Own	3	Own	S½	H	**	–4.55	Own	B4IH	141	242	C	2I	42½	7⅝x1¾x⅜▱	B
31	Intern'l (2) ...K-1	690	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HD8	3	Own R1050	S½	H	3.72–5.11		Own F50	L41H	164	316	e	FX	38	6x2¼x⅛	C
32	.....K-1-M	700	102	113	4600	2150	6.00/16-4	6.50/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	O SA-HD8-A	3	Own R1050	S½	H	3.72–5.11		Own F150	L41H	164	316	e	FX		6½x2¾x⅛‡‡	C
33	.....K-2	695	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HD8	3	Own R1050	S½	H	3.72–5.11		Own F50	L41H	164	316	e	FX	50	6▱x2¾x⅛▱	C
34	.....K-3	810	130	....	6650	2970	7.00/16-6	7.50/16-6	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own HD8-A	3	Own R1150	SF	H	4.22–5.28		Own F150	L41H	221	367	e	FX	55	6½x2¾x⅛‡‡	C
35	.....K-3-M	800	113	113	7000	2685	7.00/16-6	7.50/16-8	Own GRD214	6–3⅞x4½	213	6.3	160	82–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1150	SF	H	4.22–5.28		Own F150	L41H	221	367	e	TX	.....	6½x2¾x⅛‡‡	C
36	(a)(b) K-5	955	135	177	13500	3585	6.00/20D	8.25/20	O-GRD 233	6–3⅞x4½	233	6.3	181	93–3400	4–2⅝x6‡‡	N	Own H41B	4	Own R1360	SF	H	5.28–7.16		Own F350	LH4IH	294	509	e	TX	60	8x3x⅜▱	T
37	(a)(b) K-6	1315	134	176	14500	4475	6.50/20-6	8.25/20-10	Own BLD250	6–3⅞x4½	251	6.3	200	100–3200	4–2⅝x5‡‡	N	Own F51	5	Own R1450	SF	H	5.62–7.16		Own F470	LH4IHV	368	633	e	TX	60	8¼x3x⅜	T
38	(a)(b) K-7	1585	134	176	16500	4810	7.00/20D	9.00/20	O-BLD 269	6–3⅞x4½	269	6.3	222	100–3000	4–2.7x5‡‡	N	Own F51	5	Own R1560	SF	H	6.50–7.16		Own F470	LH4IHV	399	681	e	TX	60	8¼x3x⅜▱	T
39	(a)(b) K-8	2400	137	197	20000	6155	7.50/20D	10.00/20	O-RED 361	6–4¼x4½	361	6.3	282	126–3000	7–3¼x10‡‡	Y	Own F51	5	Own R1570	8F	H	6.43–8.51		Own F550	LH4IHV	475	811	e	PX	72	8‡‡x3½x⅜▱	T
40	(a)(b) K-10	3425	149	197	22500	7195	9.00/20	11.00/20	Own RED401	6–4¼x5	401	6.3	318	140–2800	7–3¼x10‡‡	Y	Own F54	5	Own R1670	SF	H	6.43–8.05		Own F650	LH4IHV	552	654	e	FX	72	9¼x3½x⅜▱	T
41	(a)(b) KR-11	4225	149	197	27000	8100	9.00/20D	12.00/20	O-RED 450	6–4½x5	450	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Own R1700	28F	H	6.42–8.05		Own F750	WW4IA	616	1030	G	PX	72	10x3½x⅜▱	T
42	Kenworth (D) ..521	.....	161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6–5⅛x6	743	17.	565	200–2100	7–4⅛x16½	Y	BL 7841	4	Tim U200P	DR	H	6.42–7.84		Tim 36000 TW	Ws4IA	752	1050	a	TD	72	9⅛x3¼x⅜▱	C
43	(D) 522	.....	187	245	43000	12900	10.00/20	.....	Cum HB6	6–4⅛x6	672	17.	500	150–1800	7–4½x16½	Y	BL 7841	4	Tim U200P	.....	.....	.....		Tim 36000 TW	Ws4IA	1135	.....	.....	.....	.....	9⅛x3¼x⅜▱	.....
44	586	.....	150	215	23000	10500	10.00/20	.....	Bu LO525	6–4½x5½	525	5.5	385	135–2200	.....	Y	Fu 5A620	5	Tim 58415PA	.....	.....	.....		Tim 35100 TW	Ws4IA	752	.....	.....	.....	.....	9⅛x3¼x⅜▱	.....
45	587	.....	150	215	29000	10130	10.00/20	.....	Bu LO525	6–4½x5½	525	5.5	385	135–2200	.....	Y	Fu 5A620	5	Tim U200P	.....	.....	.....		Tim 35100 TW	Ws4IA	752	.....	.....	.....	.....	9⅛x3¼x⅜▱	.....
46																															
47	Mar. Her. ..DVL-1	.....	90	118	8500	4300	7.50/16S	8.25/18S	Willys MB	4–3½x4½	134	6.4	105	60–4000	3–2.33x5.48	Y	Own	3	(Front Drive)	.....	.....	7.10		Own	4IH	202	32.7	M2	.....	.....	None	.....
48	Reo 19BHS	.....	145	145	14000	4349	8.25/20D	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 94427	2	H	6.06–8.12		Tim 30000	L4IHV	327	478	e	TX	84	9x3x¼	T
49	.....19BHS	.....	145	145	14000	4205	7.50/20D	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** –6.8		Tim 30000	L4IHV	327	478	e	TX	84	9x3x¼	T
50	.....19CHS	.....	165	165	14000	4402	8.25/20D	8.25/20	Own GC245	6–3½x4¼	245	6.2	191	89–3100	7–2⅝x10.6	Y	Cla 185F	4	Tim 54412	SF	H	** –6.8		Tim 30000	L4IHV	327	478	e	TX	105	9x3x¼	T
51	.....20BHS	.....	145	165	15500	5147	8.25/20D	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	5	Tim 56427	SF	H	** –6.16		Tim 31104	L4IHV	402	....	e	TX	84	9x3x¼	T
52	(T) 20XHS	.....	130	130	15500	4985	8.25/20D	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	4	Tim 94427	SF	H	** –6.16		Tim 31000	L4IHV	402	....	e	TX	60⅛	9⅛x3▱x▱x⅜▱	T
53	(T) 20XHS	.....	130	130	15500	4842	8.25/20D	9.00/20	Own GC288	6–3½x5	288	6.2	221	94–3000	7–2⅝x10.6	Y	Cla 205V	5	Tim 96000	2	H	6.06–8.12		Tim 31000	L4IHV	402	....	e	TX	70	9⅛x3▱x▱x⅜▱	T
54	.....25VBS	.....	145	145	24000	7655	10.00/20D	10.00/20	Con 6427	6–4¾x4½	427	6.1	324	127–2600	7–2½x11‡‡	Y	Cla 270V■	5	Tim S-200P	2F	H	** –7.84		Tim 35000	W s4IA	476	....	e	TX	85	9⅛x3▱x▱x⅜▱	T
55	.....25VBS	.....	145	145	24000	7505	10.00/20D	10.00/20	Con 6427	6–4¾x4½	427	6.1	324	127–2600	7–2½x11‡‡	Y	Cla 270V	5	Tim S-200P	2F	H	** –7.84		Tim 35000	W s4IA	476	....	e	TX	85	9⅛x3▱x▱x⅜▱	T
56	(T) 25VXS	.....	130	130	24000	7445	10.00/20D	10.00/20	Con 6427	6–4½x4½	427	6.1	324	127–2600	7–2½x11‡‡	Y	Cla 27VO	5	Tim 98415	2	H	6.53–8.53		Tim 35000	W s4IA	604	....	e	TX	70	9⅛x3▱x▱x⅜▱	T
57	Sterling HD115	.....	155	185	32000	10200	10.00/20D	11.00/20	Con R6513	6–4⅛x5½	513	5.9	400	156–2600	7–3¼x14½	Y	Fu 5A625	15	Tim S-200P	2F	R	** –7.84		Rim 26450W	Ws4IA	800	1286	a	TX	76	9x3¼x1¼	A
58	..... HC115	.....	155	185	32000	10700	10.00/20D	11.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 137W	C2	R	7.40–9.38		Tim 26450W	Ws4IA	726	1240	a	TX	76	9x3¼x1¼	A
59	(D) HC115H	.....	176	211	32000	12000	10.00/20D	11.00/24	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 137W	C2	R	5.56–9.27		Tim 26450W	Ws4IA	726	1240	a	TX	88	9x3¼x1¼	A
60	..... HC144	.....	155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 144W	C2	R	8.27–9.38		Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x3⅝	A
61	..... HC145	.....	155	175	36000	10500	10.00/22D	12.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 146W	C2	R	8.27–9.38		Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x3⅝	A
62	..... HC147	.....	155	....	36000	10900	10.00/22D	12.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 147W	C2	R	8.27–9.38		Tim 26450W	Ws4IA	786	1278	a	TX	76	9¼x3⅝x3⅝	A
63	..... HC156	.....	155	....	40000	11900	11.00/24D	12.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 156W	C2	R	8.18–9.27		Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅝x3⅝	A
64	..... HC165	.....	155	....	40000	12000	11.00/24D	12.00/24	Wau 6SRKR	6–4½x5½	517	5.5	369	125–2250	7–3x13¼	Y	Fu 5A625	15	Own 165W	C2	R	8.18–9.27		Tim 27454W	Ws4IA	786	1270	a	TX	76	9¼x3⅝x3⅝	A
65	(D) HC165H	.....	165	175	40000	13500	11.00/24D	12.00/24	Cum HBD600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 165W	C2	R	8.18–9.27		Tim 27454W	Ws4IA	786	1270	a	TX	77	9¼x3⅝x3⅝	A
66	(D) HC175H	.....	165	175	45000	14000	12.00/24D	13.00/24	Cum HBD600	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	Fu 4B865	12	Own 175W	C2	R	8.18–9.27		Tim 27454W	Ws4IA	786	1270	a	TX	77	9¼x3⅝x3⅝	A
67	Stewart 47B	.....	134	205	13000	4900	6.50/20	8.25/20	Wau 6BM	6–3⅝x4½	262	5.7	175	77–2800	7–2⅛x10¼	N	WG T9	4	Cla R950	BF	H	6.37–6.88		Cla F268	L4IHV	285	512	e	T	54	8½x2¾x¼	T
68	..... 49B	.....	144	224	19500	5950	7.00/20	9.00/20	Wau 6BZ	6–4x4¼	318	5.7	210	86–3000	7–2⅝x10▱	Y	Fu 5B330	5	Tim 56400	SF	H	6.83–7.80		Cla 450	L4IHV	408	742	E	T	64	10x2¾x▱	T
69	..... 58B	.....	140	228	22000	7100	7.50/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.3	300	105–2500	7–2⅝x12½	Y	Fu 5B430	5	Eat 1801	SF	R	** –7.16		Tim 35000	L4IHV	478	848	E	T	64‡‡	10x2¾x▱	T
70	..... 59B	.....	140	228	25000	7490	8.25/20	11.00/20	Wau 6MZA	6–4¼x4¾	404	5.3	300	105–2500	7–2⅝x12½	Y	Fu 5B430	5	Eat 2680	2F	R	** –8.50		Tim 35100	L4IHV	510	990	E	T	64‡‡	10x2¾x▱	T
71	..... 38B	.....	140	228	27000	8250	9.00/20	11.00/20	Wau 6SRKR	6–4½x5½	517	5.5	369	110–2400	7–3x13¼	Y	Fu 5A620	5	Tim 200V	2F	R	7.37–8.64		Eat 570	L4IHV	510	990	E	T	64	10x2¾x▱	T
72	Studebaker M5	.....	113	113	4500	2135	6.50/16S	6.50/16S	Own 1M	6–3x4	170	6.5	134	80–4000	4–2▱x5▱	N	Own 664949	3	Own 663597	Hy	H	** –4.82		Own 664307	L4IH	157	276	Co	2I	45‡‡	7⅛x2▱x⅜▱	T
73	.....M15A-20	.....	120	120	7800	2850	7.00/17S	7.50/17	Own 2M	6–3x4	170	6.5	134	80–4000	4–2▱x5▱	N	Own 673674	4	Own 664435	SF	H	5.66–6.60		Own 673625	L4IH	216	342	a	TX	52‡‡	7‡‡x2▱‡‡x▱	T
74	.....M15A-28	.....	128	128	10000	3085	7.50/17S	7.00/20	Own 2M	6–3x4	170	6.5	134	80–4000	4–2▱x5▱	N	Own 665174	4	Own 673674	SF	H	6.60–5.66		Own 673625	L4IH	216	342	a	TX	52‡‡	8▱x2¾x▱	T

§ Equipped with 3 speed auxiliary transmission. ♦ Cab and body included. ♦♦ Includes $8.00 for spare wheel carrier on back of cab. ▽ Front only; Rear 7.50/17. ■ Auxiliary transmission for logging operation. ▲▲ Diameter Front 2.343; Center 2.375; Rear 2.406; Total length 5.750.

(Turn to page 96, Please)

Soft Pressure does it!

Soft pressure keeps the steel segments on the cylinder wall—gently, positively. That's why Hastings Steel-Vents have set so many records for satisfactory performance and long engine life. That's why they are so popular for rebores and resleeves as well as re-rings and extreme tapers.

SOFT PRESSURE DOES IT—IN REBORES, TOO

Long engine life is what every taxicab operator wants. This company gets it with Hastings Steel-Vents: "For the past four years we have been using Steel-Vent 'Motor Engineered' Sets *in all our rebores.* We receive much longer life from this combination than we did from plain rings. As a result the cylinder wall wear is considerably less. This means that we are able to get more re-ring jobs between rebores and a greater total mileage on the motor."

HASTINGS MANUFACTURING CO. • HASTINGS, MICH. • Hastings Ltd., Toronto

New Radio Show

"RIGHT DOWN YOUR ALLEY"

Coast-to-Coast

AMERICAN BROADCASTING COMPANY

Every Sunday Afternoon

4:30 Eastern Daylight Time	2:30 Central Standard Time
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3:30 Central Daylight Time	12:30 Pacific Standard Time

HASTINGS STEEL-VENT

PISTON RINGS

U. S. PAT. 2,148,997

TOUGH ON OIL-PUMPING GENTLE ON CYLINDER WALLS

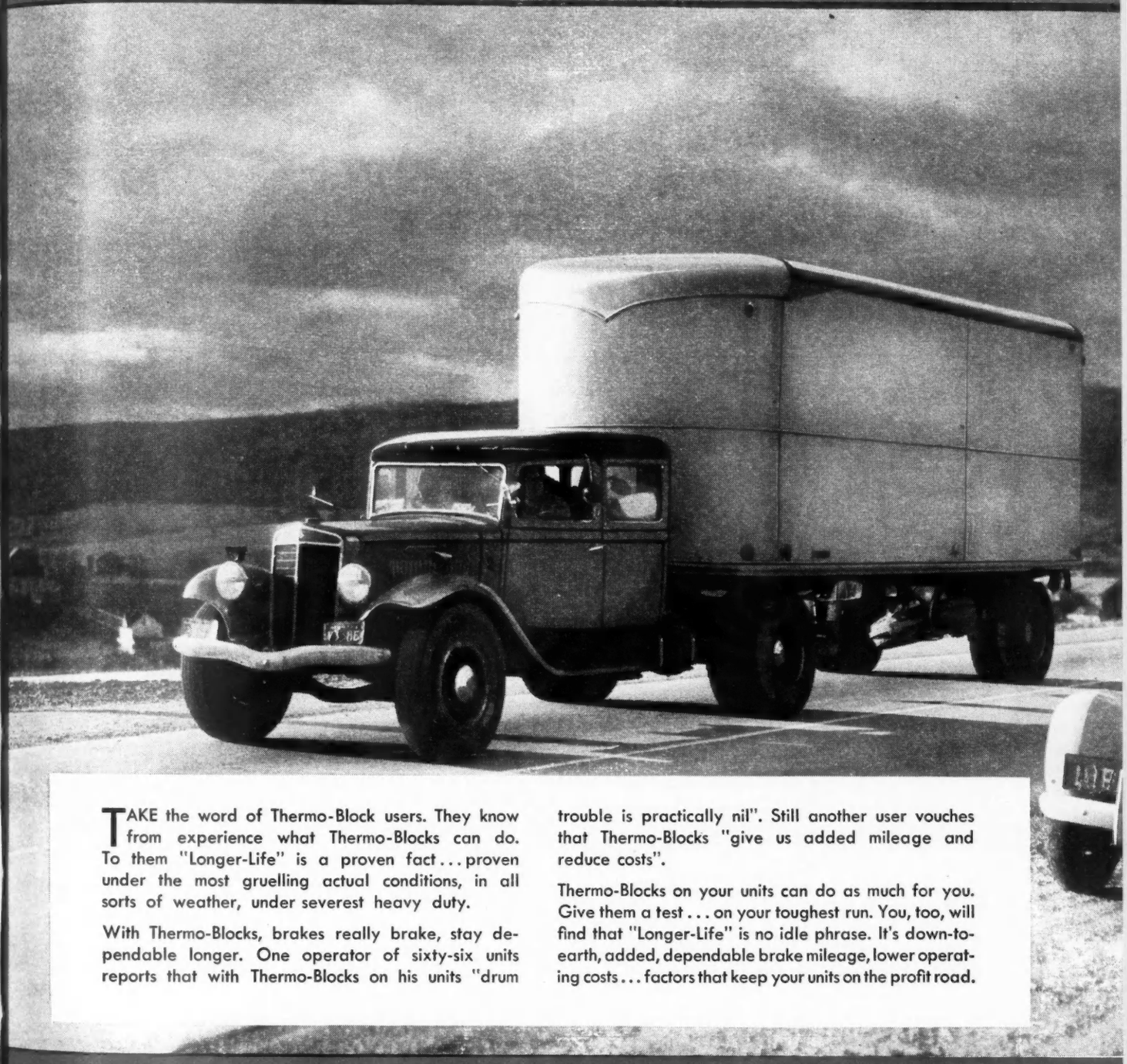
(Continued from Page 94)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Sp'ds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio, Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make, Location, Type Operat'n	BRAKES SERVICE: Lining Area	BRAKES SERVICE: Drum Area	BRAKES SERVICE: Drum Material	BRAKES: Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	FRAME: Type
1	Studebaker...M16	.....	128	195	13500	3685	7.00/20D	8.25/20	Own 3M	6–3 1/8 x4 1/2	226	6.5	176	94–3600	4–2 1/2 x5 11/16	N	Own 674989	4	Own 665171	SF	H	5.66–6.66	Own 664452	L4IH	280	442	Co	TX	60 11/16	8 1/2 x2 11/16 x 1/2	T
2	cont. M16(2–8p)	.....	128	195	15000	3850	7.00/20D	8.25/20	Own 3M	6–3 1/8 x4 1/2	226	6.5	176	94–3600	4–2 1/2 x5 11/16	N	Own 674989	4	Own 674681	SF	H	Dual Rge.	Own 664452	L4IH	280	442	Co	TX	60 11/16	8 1/2 x2 11/16 x 1/2	T
3	Truckstell(C) F18-5	.....	140	194	18500	▲5265	7.50/20*	10.00/20	Ford	8–3 1/8 x3 3/4	239	6.4	180	100–3800	3–2 1/2 x4.71	N	Ford	12	Cla R1300	SF	H	5.67–6.83	Ford	L4IHV	355	610	a	TX	65 3/4	7 1/2 x3x .47	CTf
4	(C).....F19-5-0	.....	108	166	19500	▲5265	7.50/20*	10.00/20	Ford	8–3 1/8 x3 3/4	239	6.7	180	100–3800	3–2 1/2 x4.71	N	Ford	12	Cla R1300	SF	H	5.67–6.83	Ford	L4IHV	355	610	a	TX	65 3/4	7 1/2 x3x .47	CTf
5	(C).....C18-5	.....	144	197	18500	▲5395	7.50/20*	10.00/20	Chevrolet	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–2 3/4 x5 1/16	N	Chev & BL	12	Cla R1300	SF	H	5.67–6.83	Chevrolet	L4IHV	355	610	a	TD	67	7 1/2 x3x .47	CTf
6	(C).....C19-5-0	.....	114	173	19500	▲5395	7.50/20*	10.00/20	Chevrolet	6–3 1/8 x3 11/16	235	6.6	192	93–3100	4–2 3/4 x5 1/16	N	Chev & BL	12	Cla R1300	SF	H	5.67–6.83	Chevrolet	L4IHV	355	610	a	TD	67	7 1/2 x3x .47	CTf
7	Ward La Fr....D-1	.....	149	220	25000	9500	10.00/20	10.00/20	Con B6427	6–4 1/8 x4 1/2	427	6.1	325	127–....	7–2 1/8 x13 1/2	Y	Fu 5A430	5	Tim 58415PA	B	R	** –6.14	Tim 35011TW	Ws4A	600	928	c	TM	68 1/4	9 1/2 x3x 1/4	....
8	.....D-1B	.....	149	220	25000	9500	10.00/20	11.00/20	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–....	7–2 3/4 x14 1/2	Y	Fu 5A620	5	Tim 58415PA	B	R	** –6.14	Tim 35011TW	Ws4A	600	928	c	TM	68 1/4	9 1/2 x3x 1/4	....
9	.....D-1C	.....	149	220	29000	9500	11.00/20	11.00/24	Con B6427	6–4 1/8 x4 1/2	427	6.1	325	127–....	7–2 1/8 x13 1/2	Y	Fu 5A430	5	Tim 8-200P	S2	R	** –7.84	Tim 35011TW	Ws4A	673	1031	c	TM	68 1/4	9 1/2 x3x 1/4	....
10	.....D-2	.....	149	220	29000	12000	11.00/20	11.00/24	Con R6513	6–4 1/2 x5 1/2	513	5.9	400	180–....	7–3 1/4 x14 1/2	Y	Fu 5A620	5	Tim U200P	S2	R	** –7.84	Tim 35011TW	Ws4A	673	1031	c	TM	68 1/4	10x3x 1/8	....
11	.....D-3	.....	149	220	30000	12000	11.00/22	12.00/24	Con R6572	6–4 1/4 x5 1/2	572	5.9	454	198–....	7–3 1/4 x14 1/2	Y	Fu 5A650	5	Tim U200P	S2	R	** –7.84	Tim 26458W	Ws4A	750	1159	c	TM	68 1/4	10x3x 1/8	....
12	(D).....D-5	.....	155	226	35000	12500	11.00/22	12.00/24	Cum HB600	6–4 1/2 x6	672	17.500	150–....	7–4 1/2 x16 3/4	Y	Fu 5A650	5	Tim U200P	S2	R	** –6.42	Tim 26458W	Ws4A	750	1159	c	TM	68 1/4	10x3x 1/8	....
13	.....FD-0	.....	186	....	.....	12000	11.00/20	11.00/24	Con 22R	6–4 1/2 x5 1/4	501	5.4	384	148–....	7–2 3/4 x14 1/2	Y	Fu 5A620	5	Tim R3100W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99 3/4	9 1/2 x3x 1/8	....
14	.....FD-1	.....	186	....	37000	12000	11.00/20	11.00/24	Con R6602	6–4 1/2 x5 3/4	602	6.2	472	206–....	7–3 1/4 x14 1/2	Y	Fu 5A650	5	Tim R462W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99 3/4	10x3x 1/8	....
15	(D).....FD-2	.....	186	....	37000	12500	11.00/22	11.00/24	Cum HB600	6–4 1/2 x6	672	17.500	150–....	7–4 1/2 x16 3/4	Y	Fu 5A920	5	Tim R462W	S2	R	** –8.15	Tim F3100W	Ws4A	627	1029	c	TM	99 3/4	10x3x 1/8	....
Four-Wheel-Drive																															
16	Corbitt.....18FG	.....	Opt	Opt	18000	6600	8.25/20	9.00/20	Con M6330	6–4x4 1/4	330	5.7	240	102–2800	7–2 1/4 x12	Y	Fu 5A33	5	Tim 56410H	SF	H	** –6.83	Tim F35H	L4IHV	....	578	a	TD	Opt	8x3 1/4 x 1/4	T
17	.....22FG	.....	159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6–4 1/2 x4 1/2	371	5.7	280	100–2500	7–2 1/2 x13 1/2	Y	Fu 5A43	5	Tim R2090H	2F	H	** –8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x 1/4	T
18	.....25FG	.....	Opt	Opt	25000	.....	10.00/22	11.00/22	Con R6512	6–4 1/2 x5 1/2	513	5.9	400	165–2600	7–3 1/4 x14 1/2	Y	Fu 5A62	5	Tim R3100W	2F	H	** –8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10 1/2 x3x 1/4	Tf
19	.....28FG	.....	Opt	Opt	28000	.....	11.00/22	11.00/24	Con R6602	6–4 1/2 x5 3/4	602	6.0	460	185–2600	7–3 3/4 x14 1/2	Y	Fu 5A65	5	Tim R462W	2F	H	** –8.14	Tim F3100W	Ws4IA	....	1030	a	TD	Opt	10 1/2 x3x 1/4	Tf
20	Dodge.....WDX	.....	126	126	8700	.....	7.50/16	9.00/16S	Own T-137	6–3 1/2 x4 1/2	230	6.7	185	94–3200	4–2 1/2 x4.8	Y	NP	4	Own	HyF	H	4.89–5.83	Own	O4IH	210	311	Co	TX	52 11/16	6 1/2 x2 1/8 x 1/8	DL
21	FWD.....HA	.....	144	156	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	223	95–2800	7–2 1/4 x10 1/4	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79 1/2	9x3x 1/4	T
22	.....HR	.....	144	156	20000	▲8000	9.00/20	10.00/20	Wau MZA	6–4 1/4 x4 1/4	404	5.6	270	129–2800	7–2 3/4 x12 5/8	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	79 1/2	9x3x 1/4	T
23	.....HG	.....	154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6–4 1/4 x4 1/4	404	5.6	270	129–2800	7–2 3/4 x12 5/8	Y	Own H	5	Own H	SF	H	6.6 –9.06	Own H	L4IHV	391	807	a	T4	89 3/4	7 1/8 x3x 11/16	C
24	.....SU	.....	150	182	25000	▲10420	11.00/20D	12.00/20	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	126–2400	7–3x13 3/8	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L4IHV	512	867	a	T4	90	7 1/8 x3x 11/16	C
25	.....SU‡	.....	150	182	28000	10570	11.00/20D	12.00/20	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	126–2400	7–3x13 3/8	Y	Own U	5	Own U	BF	H	6.7 –9.8	Own U	L4IHV	512	867	a	T4	90	8 1/8 x3x 11/16	C
26	.....M7	.....	150	150	38600	▲15400	12.00/20D	12.00/20	Wau 145GK	6–5 1/4 x6	779	6.2	585	186–2000	7–3 1/2 x17 1/4	Y	Own M	10	Tim 1758	2F	H	** –7.53	Wis F409	Ws4IA	578	976	a	T4	90	10 1/8 x3x 11/16	C
27	(D).....M7D	.....	150	150	38600	▲15700	12.00/20D	12.00/20	Cum HB600	6–4 1/2 x6	672	17.500	150–1800	7–4 1/2 x16 3/4	Y	Own M	10	Tim 1758	2F	H	** –7.53	Wis F409	Ws4IA	578	976	a	T4	90	10 1/8 x3x 11/16	C
28	Marmon-MH440-4	.....	158	170	20700	▲8700	9.00/20D	10.00/20	Her WXLC3	6–4 1/4 x4 1/4	404	5.4	293	118–2800	7–2 1/4 x8 3/4	Y	Fu 5A430	5	Tim R2090W	2B	H	** –8.43	Tim F2090W	W....A	584	887	c	F	72	9 11/16 x3x 1/4	T
29	Herr...MH555-4	.....	161	173	24000	▲10200	10.00/20D	11.00/20	Her RXC	6–4 3/4 x5 1/4	529	6.3	390	131–2200	7–3x9 1/2	Y	Fu 5A620	5	Tim R3100W	2B	H	** –8.15	Tim F3100W	W....A	692	1039	c	F	72	10 1/8 x3x 1/8	T
30	(C)....CMM5-4	.....	134	134	13500	▲4847	7.50/20D	7.50/20	Ford	8–3 1/8 x3 3/4	239	6.4	176	100–3500	3–2 1/2 x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F.....H	302	563	a	F	60 1/8	7x2 3/4 x 1/2	T
31	(C)....CMM6-4	.....	158	158	13500	▲4973	7.50/20D	7.50/20	Ford	8–3 1/8 x3 3/4	239	6.4	176	100–3500	3–2 1/2 x4.71	N	Ford	4	Ford	S	H	** –6.67	Own M5	F.....H	303	563	a	F	84 1/8	7x2 3/4 x 1/2	T
32	Oshkosh....W-307	.....	149	204	23600	10200	10.00/20	11.00/20	Her WXLC3	6–4 1/4 x4 1/4	404	6.3	310	118–2500	7–2 1/4 x13 3/4	Y	Fu 5A43	5	Tim 58300	SF	H	** –7.8	Own W307	L41I	560	867	G	TX	82	8 1/4 x3x 5/16	TF
33	.....W-700	.....	150	204	30000	▲12000	11.00/20	12.00/20S	Her RXCO	6–4 3/4 x5 1/4	529	5.4	380	128–2200	7–3 1/2 x 1/4	Y	Fu 5A620	5	Own W700	2F	H	** –6.6	Own W700	L4IH	630	975	G	TX	82	10 1/2 x3x 3/4	TF
34	.....W-703	.....	150	204	30000	▲12200	11.00/20	12.00/20S	Her RXLD	6–4 3/4 x5 1/4	558	5.4	405	141–2200	7–3 1/2 x13 1/4	Y	Fu 5A620	5	Own W700	2F	H	** –6.6	Own W700	L4IH	630	975	G	TX	82	10 1/2 x3x 3/4	TF
35	(D).....W-906	.....	158	190	38000	▲14900	12.00/20	14.00/20S	Cum HB600	6–4 1/2 x6	672	...	500	150–1800	7–4 1/2 x16	Y	Fu 4A86	4	Own W906	2F	H	** –6.2	Own W906	LT4IWS	645	975	G	TX	90	10 1/2 x3x 5/8	TF
36	Peterbilt(D)270DD	8950	165	Opt	27000	12500	10.00/20D	11.00/22	Cum HB600	6–4 1/2 x6	672	17.500	150–1800	7–4 1/2 x16 1/2	Y	Spi 7741	12	U-200P	2F	R	** –6.42	Tim 36000W	Ws4IA	800	1250	a	FD	80 1/2	10 3/8 x3 1/4 x 1/8	TL
37	Walter(c.f.)....FN	.....	126	150	20000	7500	9.00/20D	10.00/20S	Wau MZR	6–4 1/4 x4 1/4	404	5.6	290	100–2500	7–2 1/4 x12 1/2	Y	Own FN	6	Own FNB	2	H	6.0–8.0	Own FN	O4IA	470	670	G	FI	84	7x2 3/4 x 1/4	C
38	(c.f.)..FZM	.....	126	150	24000	8500	10.00/20D	12.00/20S	Wau MZR	6–4 1/4 x4 1/4	404	5.6	290	100–2500	7–2 1/4 x12 1/2	Y	Own FN	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3 1/2 x 1/2	B
39	(c.f.)..FKM	.....	126	150	24000	9000	10.00/20D	12.00/20S	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	125–2200	7–3x13 1/4	Y	Own FJD	6	Own FMB	2	H	6.0–8.0	Own FJ	O4IA	470	670	G	FI	84	12x3 1/2 x 1/2	B
40	(c.f.)..FCK	.....	126	138	30000	10500	10.00/24D	11.00/24S	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	125–2200	7–3x13 3/8	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	96	14x3 3/4 x 1/2	B
41	(c.f.)....FC	.....	138	162	32000	11000	11.00/24D	12.00/24S	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	125–2200	7–3x13 3/8	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3 3/4 x 1/2	B
42	(c.f.)..FCR	.....	126	162	42000	12000	12.00/24D	12.00/24	Wau SRKR	6–4 1/2 x5 1/8	517	5.5	365	125–2200	7–3x13 3/8	Y	Own FC	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	84	14x3 3/4 x 1/2	B
43	(c.f.)..FGB	.....	126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6–5 1/4 x6	779	5.7	580	175–2000	7–3 1/2 x17 3/4	Y	Own FA	6	Own FCB	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3 3/4 x 1/2	B
44	(c.f.)..FGR	.....	126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6–5 1/4 x6	779	5.7	580	175–2000	7–3 1/2 x17 3/4	Y	Own FA	6	Own FCR	2	H	7.5–9.0	Own FCR	O4IA	585	890	D	FI	89	14x3 3/4 x 1/2	B
45	Willys Unv. Jp..CJ-2A	*1090	80	80	2937	†1646	6.00/16	7.00/15	Own CJ-2A	4–3 1/2 x4 1/2	134	6.4	105	60–4000	3–2.33x5.48	N	WG T90A	3	Spi 41-2	Hy	H	** –5.38	Spi 25	B4H	118	520	a	F	80	4x1 1/4 x 1/8	P
Six-Wheelers Wheels Driven ▼																															
46	Corbitt.....35RG	.....	Opt	Opt	35000	.....	10.00/20	10.00/22	Con B6427	6–4 1/8 x4 1/2	427	6.1	332	127–2600	7–2 1/8 x13 1/2	Y	Fu 5A43	5	T SBD1500PA	SF	L	** –6.44	Tim 35000TW	Ws6IA	....	1094	a	TX	Opt	10 1/2 x7x 1/4	Tf
47	.....40RG	.....	Opt	Opt	40000	.....	10.00/22	11.00/22	Con R6602	6–4 1/2 x5 3/4	602	6.0	460	185–2600	7–3 1/4 x14 1/2	Y	Fu 5A65	5	T SDD3000PA	2F	L	** –6.84	Tim 35100TW	Ws6IA	....	1567	a	TD	Opt	12 1/4 x3 1/4 x 5/8	T
48	.....40SRG	.....	Opt	Opt	40000	.....	10.00/20	10.00/22	Con R6513	6–4 1/2 x5 1/2	513	5.9	400	165–2600	7–3 1/4 x14 1/2	Y	Fu 5A62	10	T SFD154W	2F	L	** –8.43	Tim F2090W	Ws6IA	....	1302	a	TD	Opt	10 1/2 x3x 1/4	Tf
49	.....50SD6	.....	Opt	Opt	50000	.....	10.00/22	11.00/22	Her HXD	6–5 1/2 x6	855	...	645	203–2100	7–3 1/2 x17	Y	Fu 4A86	8	T SD353W	2F	L	** –7.33	Tim F3100W	Ws6IA	....	1626	a	TD	Opt	10 1/2 x3x 1/4	Tf
	Diamond T																														
50	...900SD3010PA	.....	204	204	40000	13750	10.00/22D	10.00/22	Her RXLC	6–4 1/2 x5 1/4	529	5.4	365	132–2100	7–3 1/2 x13 1/4	Y	Spi 6241, 703	12	T SD3010PA	2F	R	** –7.50	Tim 36021TW	Ws6IA	1082	....	A	TD	134	10 1/4 x3 1/4 x 1/8	T
51	(D)910SW3012PA	.....	206	206	40000	15100	10.00/22D	10.00/22	Cum HB-600	6–4 1/8 x6	672	17.500	150–1800	7–4 1/2 x16 3/4	Y	Spi 7851, 703	15	T SW3012PA	2F	R	** –6.07	Tim 36021TW	Ws6IA	1082	....	A	TD	124	10 1/2 x3 1/4 x 1/8	T
52	.(D)910SD462W	.....	206	206	50000	16300	11.00/22D	11.00/22	Cum HB600	6–4 1/2 x6	672	17.500	150–1800	7–4 1/2 x16 3/4	Y	Spi 7851, 703	15	T SD462W	2F	R	** –8.15	Tim 36021TW	Ws6IA	1014	....	A	TD	124	10 1/2 x3 1/4 x 1/8	T
53	F.W.D.....M6x6	.....	243	276	58000	▲21400	11.00/24D	11.00/24	Her HXE	6–5 1/4 x6	935	5.5	650	198–2000	7–3 1/2 x16 1/4	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	183	10 1/8 x3x 11/16	P
54	(D)....M6X6D	.....	180	276	58000	▲21800	11.00/24D	11.00/24	Cum HB600	6–4 1/2 x6	672	17.500	150–1800	7–4 1/2 x16 3/4	Y	Fu 4B86	8	Wis SD462	2F	H	** –8.15	Wis F409	Ws6IA	1080	1680	a	T6	216	10 1/8 x3x 11/16	P
	International (2)																														
55	(b)....K-6-F 4R	.....	151	194	22000	6750	7.00/20	8.25/20	Own BLD250	6–3 1/8 x4 1/2	251	6.3	200	100–3200	4–2 1/4 x5 1/16	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH4IHV	507	848	c	PX	77	8 1/8 x 1/8 x 1/8	T
56	(b)...K-8-F 4R	3785	161	215	27000	8470	7.00/20	9.00/20	Own RED401	6–4 1/4 x5	401	6.3	318	140–2800	7–3 1/4 x10 11/16	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH6IHV	705	944	c	PX	84	9 1/4 x3 1/8 x 3/4	T
57	(b)...K-11-F 4R	.....	161	215	37000	10925	9.00/20	10.00/20	Own RED450	6–4 3/4 x5	451	6.3	360	148–2600	7–3 3/4 x10 11/16	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	TW6IA	966	....	G	PX	84	10 1/2 x3 1/8 x 3/4	T

▲ Includes cab. * Vehicle price without Federal Tax at Toledo. ° Rear 8.25/20. † With Power Take-off. ‡ Over size frame

(Turn to Page 98, Please)

Thermoid the Longer-Life Line



TAKE the word of Thermo-Block users. They know from experience what Thermo-Blocks can do. To them "Longer-Life" is a proven fact . . . proven under the most gruelling actual conditions, in all sorts of weather, under severest heavy duty.

With Thermo-Blocks, brakes really brake, stay dependable longer. One operator of sixty-six units reports that with Thermo-Blocks on his units "drum trouble is practically nil". Still another user vouches that Thermo-Blocks "give us added mileage and reduce costs".

Thermo-Blocks on your units can do as much for you. Give them a test . . . on your toughest run. You, too, will find that "Longer-Life" is no idle phrase. It's down-to-earth, added, dependable brake mileage, lower operating costs . . . factors that keep your units on the profit road.

Thermoid

THE Longer-Life LINE FOR HEAVY-DUTY JOBS

Thermo-Blocks • Clutch Facings • Fan Belts • Radiator Hose

THERMOID COMPANY, TRENTON 6, NEW JERSEY

(Continued from Page 96)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES Standard Front and Rear (S-single rear D-dual rear)	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	ENGINE DETAILS No. of Cylinders, Bore and Stroke	ENGINE DETAILS Displacement	ENGINE DETAILS Comp. Ratio	ENGINE DETAILS Torque lb. ft.	ENGINE DETAILS Max. Brake H.P. at R.P.M. Given	ENGINE DETAILS Number, Diameter and Length Main Bearings	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Sp'ds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	BRAKES SERVICE Inlet Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimension (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Ken-worth	(D)524.4R		193	193	41000	14600	10.00/20	11.00/22	Cum HB6	6–5½x6	743	17.	565	200–2100	7–4½x16½		YBL 7841	4Tl 8W3012PA	WF	R	** –6.16	Tlm 36000	W84IA	924	1248a	TD	102	9¼x3¾x¼	C
2				193	241	54000	15100	10.00/20	10.00/22	Cum HB6	6–5½x6	743	17.	565	200–2100	7–4½x16½		YBL 7841	4Tm 8W452	WF	R	6.0 –7.6	Tlm 35000	W84IA	819	1192a	TD	102	9¼x3¾x¼	C
3				186	234	40000	12500	10.00/20	10.00/22	Cud 6V325	6–5 x5½	525	5–5	385	135–2200	7–3x11½		YFu 5A620	5Tl 8W3012PA	WF	R	** –6.16	Tlm 35000	W84IA	924	1248a	TD	102	9¼x3¾x¼	C
4				186	234	35000	12500	10.00/20	10.00/22	Wau 636ZR	6–4¼x5½	494	5.9	300	112–2500	7–2¾x12½		YFu 5A430	5Tl 8W3012PA	WF	R	** –6.16	Tlm 35100	W84IA	924	1248a	TD	102	9¼x3¾x¼	C
5				193	241	54000	17000	11.00/22	12.00/24	Cum HB6R	6–4½x6	743	17.	565	200–2100	7–4½x16½		YBL 7841	5Tl 8W3012PA	WF	R	** –8.15	Tlm 35100	W84IA	819	1192a	TD	102	9¼x3¾x¼	C
6				255	255	44800	20700	13.00/24	13.00/24	Cum HB6	6–4½x6	672	17.	600	150–1800	7–4½x16½		YBL 7841	4Tlm 8D462	DR	R	** –8.15	Tlm 36000	W84IA	819	1192a	TD	102	9¼x3¾x¼	dbC
7	Marmon-Herr.																		4Tlm 8D462W	WF	R	** –8.15	Tlm F3200W	W84IA	1109	1192a	TD	168	9¼x3¾x¼	dbC
8	(C) CMM5T–6	2790	156	....	225000	7.50/20			Ford									N Ford	4Thornton	S	H			M	503	....	a	F	82½	7½x3¾x	C
9	(C) CMM6T–8	2820	180	....	225000	7.50/20			Ford									N Ford	4Thornton	S	H	** –6.67	Own M5	M	503	....	a	F	106½	7½x3¾x	C
10	(C) MH–555–6	....	260	260	37000	11.00/20			Her RXC									YFu 5A620	4Tlm SD353	2B	H	** –8.15	Tlm F3100W	Ws..A	1092	1608	....	F	84	10½x3¾x½	T
11	Peterbilt	(D)344DT	11415	189	Opt	43000	16250	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Tlm8W3012W	WF	L	** –6.16	T 26450W	W86IA	1160	1878a	TX	97	9x3¼x¼	A
12			11870	187	Opt	43000	17300	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Tlm 8W3012PA	WF	L	** –6.16	T 26450W	W86IA	1160	1878a	TX	131	9x3¼x¼	A
13			11915	187	Opt	56000	17450	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Tlm 8W452W	WF	L	** –6.00	T 26450W	W86IA	1000	1626a	FD	106½	10½x3¾x½	TL
14			12575	187	Opt	56000	17900	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Tlm 8D462W	2F	A	** –8.15	T 27454W	W86IA	1000	1626a	FD	106½	10½x3¾x½	TL
15	Sterling																													
16	(D) HWS160H	....		185	245	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12T SW3002PA	WF	L	** –6.16	T 26450W	W86IA	1160	1878a	TX	97	9x3¼x¼	A
17	(D) HWS160H	....		219	232	42000	14500	10.00/20D	10.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12T SW3002PA	WF	L	** –6.16	T 26450W	W86IA	1160	1878a	TX	131	9x3¼x¼	A
18	(D) HWS160HS	....		211	232	42000	15100	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Tlm 8W452W	WF	L	** –6.00	T 26450W	W86IA	1000	1626a	FD	106½	10½x3¾x½	TL
19	HCS195	....		191	207	48000	14000	10.00/20D	11.00/22	Wau 140GK	6–4¼x5½	525	6.1	403	137–2250	7–3x16½		YFu 5A620	12Own 195W	CD	R	** –7.31	T 26450W	W86IA	1160	1878a	TX	105	9¼x3¾x¼	A
20	(D) HCS195H	....		178	195	60000	15500	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12Own 195W	CD	R	** –7.31	T 26450W	W86IA	1160	1978a	TX	109	9¼x3¾x¼	A
21	(D) HW9235H	....		197	211	52000	15500	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12T SW452W	WF	L	** –6.00	T 26450W	W86IA	1000	1626a	FD	106½	10½x3¾x½	TL
22	(D) HCS265H	....		178	195	60000	18500	11.00/24D	11.00/24	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YSpl 7741	12T SW452W	WF	L	** –7.31	T 26450W	W86IA	1160	1978a	TX	109	9¼x3¾x¼	A
23	(D) HCS297H	....		178	195	70000	20500	12.00/24D	13.00/24	Cum HB600	6–4½x6	672	17.	500	150–1800	7–4½x16½		YFu 4B86	12Own 265W	CD	R	10.76–15.0	T 27454W	W86IA	1092	1810a	TX	107	9¼x3¾x¼	A
24	Trucksteel																	YFu 4B86	12Own 330W	CD	R	10.76–15.0	T 27454W	W86IA	1100	2010a	TX	90	9¼x3¾x¼	A
25	(C) F2X26.2F	....		156	237	26000	5900	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	4Ford	SF		** –6.67	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
26	(C) F2X27–0.2F	....		156	237	27000	6045	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	8Eat 1350	SFd		5.83–8.11	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
27	(C) F2X34.2F	....		156	237	34000	8233	8.25/20	10.00/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford and BL	12Cla R1300	SF		5.67–6.83	Ford	F61HV	605	1043a	TX	82½	7½x3¾x.47	CTf
28	(C) F4X26.4F	....		135	224	34000	8233	8.25/20	10.00/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford and BL	12Cla R1300	SF		5.67–6.83	Ford	F61HV	605	1043a	TX	82½	7½x3¾x.47	CTf
29	(C) F4X29.4R	....		144	210	26000	6300	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	8Ford	SF		6.07–10.5	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
30	(C) F4X29.4R	....		147	210	27000	6300	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	8Eat 1350	SFd		6.07–10.5	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
31	(C) F4X30.4R	....		117	180	30000	7000	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	16Eat 1350	SFd		7.47–12.9	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
32	(C) F4X30.4R	....		157	234	26000	5800	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2¼x4.71	N	Ford	16Eat 1350	SFd		7.47–12.9	Ford	F61HV	502	836c	TX	82½	7½x3¾x.47	CTf
33	(C) C2X26.2F	....		157	234	26000	6500	7.50/20	8.25/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	4Chevrolet	SFd		** –6.17	Chevrolet	C61HV	546	780a	TX	63¼	7½x3¾x.47	CTf
34	(C) C2X28.2F	....		157	234	28000	6500	7.50/20	8.25/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	8Tlm	SFd		5.64–8.22	Chevrolet	C61HV	546	780a	2I	82½	7½x3¾x.47	CTf
35	(C) C2X34.2F	....		141	224	34000	6500	7.50/20	8.25/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	12Cla R1300	SF		5.64–8.22	Chevrolet	C61HV	546	780a	2I	82½	7½x3¾x.47	CTf
36	(C) C2X34.2F	....		157	234	34000	8285	8.25/20	10.00/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	C and BL	12Cla R1300	SF		5.67–6.83	Chevrolet	C61HV	615	1043a	TD	82½	7½x3¾x.47	CTf
37	(C) C4X26.4R	....		145	212	26000	6120	7.50/20	7.50/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	8Chevrolet	SF		6.41–11.1	Chevrolet	C61HV	546	780a	2I	63¼	7½x3¾x.47	CTf
38	(C) C4X27–0	....		117	184	27000	2600	7.50/20	7.50/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	8Chevrolet	SF		6.41–11.1	Chevrolet	C61HV	546	780a	2I	63¼	7½x3¾x.47	CTf
39	(C) C4X29.4R	....		145	212	29000	6880	7.50/20	8.25/20	Chevrolet	6–3 x3¾	235	6.0	192	93–3100	4–2¼x5½	N	Chevrolet	16Eat 1350	SFd		7.47–12.9	Ford	F61HV	512	836a	TD	63	7½x3¾x.47	CTf
40	(C) F4X30–0	....		117	184	30000	2900	7.50/20	8.25/20	Ford	8–3 x3¾	239	6.4	180	100–3800	3–2½x4.71	N	Ford	16Eat 1350	SFd		7.47–12.9	Ford	F61HV	512	836a	TD	63	7½x3¾x.47	CTf

• Includes cab. ♦ Additional speeds with auxiliary transmission.

QUIZ ANSWERS

CCJ Quiz on Page 78

1. c. Springfield, Mass. The Duryeas are usually credited with having built the first automobile in America, although there has been much debate on the point.

2. d. The Studebaker Corp., which was in business making carriages and wagons before the advent of the motor car.

3. a. King in 1896 built and drove the first auto on the streets of Detroit.

4. c. Oldfield gained fame as the racing driver of Henry Ford's racer, the "999."

5. b. Skating. Ford's recreations have been almost wholly confined to his business and his exhibitions, schools, experimental farms, and laboratories.

6. a. General Motors. Nash, who had worked for Durant's Flint Road Cart Co. in 1893, took over at General Motors in 1910 when banking interests forced Durant out. Durant came back in 1915, and Nash then organized his own company.

7. c. Reo. The name Reo is taken from the initials of Ransom E. Olds. Olds helped found the Reo Motor Car Co. after disposing of his interests in Oldsmobile.

8. b. Haynes is usually credited with either the first or the second automobile in this country. Although Haynes had the idea for the car, he was not a mechanic or builder, and it was the Apperson brothers who built the car for him.

9. a. Snyder's faith in the motor vehicles led him to start selling cars in the late 90's. He is today selling Hudson cars and White trucks in York, Pa.

10. a-5. Zaugg has been working for White for the past 51 years.

b-2. Durant started the Chevrolet Motor Co. in 1913.

c-3. Sloan is Chairman of the Board at General Motors.

d-4. Van Benschoten is a pioneer. Dodge and Plymouth dealer of Poughkeepsie, N. Y.

e-1. Holley was selected to represent early automotive parts manufacturers.

END

(Please resume your reading on P. 82)

1• "Humph," he snorted, "I'll be a monkey's uncle before I'll buy any new truck mirrors, and furthermore—"

"Look," I interrupted, "this 441 Protecto is no ordinary mirror. Its exclusive patented rubber rim and patented truss constructed housing assure extra years of service—save you important money on replacements!"

"What's this rubber rim and truss housing business?" he asked.

2• "The rubber rim forms a protective cushion for the glass, minimizes breakage. It's inner-grooved to hold glass and head firmly in place and is absolutely waterproof.

"The truss construction," I went on, "makes the 441 Protecto housing larger and heavier. It provides extra rigidity, greater support for mirror head, firmness where strain is greatest—maximum strength with minimum vibration!"

3• "Say," he shouted, "those features are terrific! Now tell me about that bracket."

"That's an extra heavy duty universal ear type bracket," I replied. "It attaches solidly direct to body and is held in place by friction tension. Mirror can be adjusted up, down, forward and backward. Length of mirror contracted is 19″, fully extended 28″. Mirror head has a 6″ diameter and—"

His eyes popped wide open and——

"Well," THE FLEET OWNER EXCLAIMED:

"I'll be a monkey's uncle!"

4• "Yes sir, you might not believe it, but as soon as the fleet owner made that crack about 'being a monkey's uncle', the place was swarming with the long-tailed critters.

Did the monkeys bother the fleet owner? Not a bit—he was too happy with his new 441 Protecto mirror to even notice them!

FAMOUS KING BEE PRODUCTS

PROTECTO Rubber Rim Truck Mirrors (PATENTED) – **HY-POWER** Truck Lamps (PATENTED)

Indestructible **FOTO-RAY** Reflectors (PATENTED)

Manufactured by AMERICAN AUTOMATIC DEVICES CO.

502 S. Throop Street, Chicago 7, Illinois

8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 57)

found in crankcase drains or in sludge samples, a careful check of the head gasket, block and head is essential.

The iron and silica found in practically all sludge deposits, usually in small percentages, derive from normal engine wear and from road dirt and dust.

The remaining constituent of sludges is the "resins". This term has come to be applied to oxidized hydrocarbons, and as the name implies, "resins" are of a sticky, varnish-like nature and act as binders and adhesives to coagulate oil contaminants into sludge deposits.

Fuel Source of "Resins"

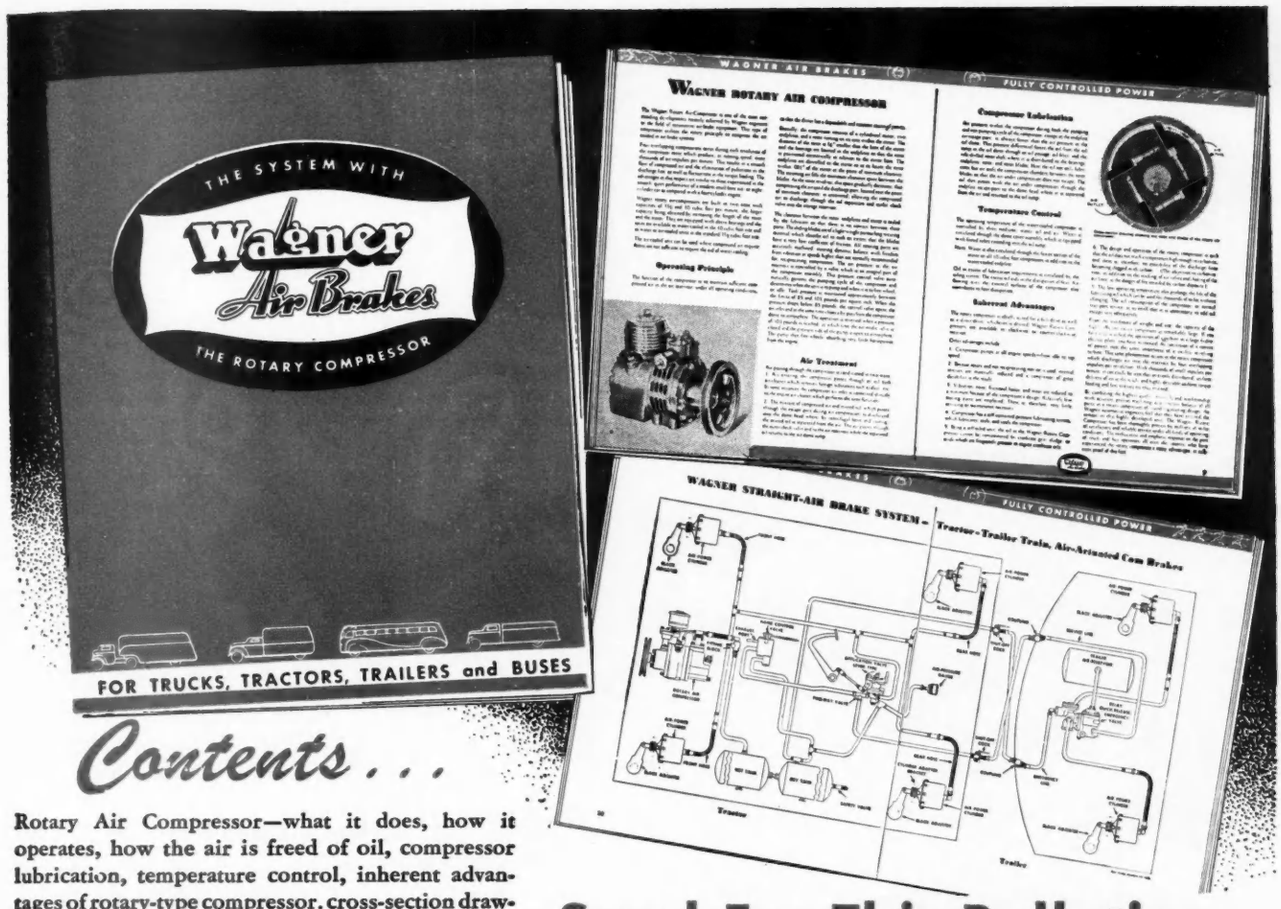
THE general impression has existed that "resins" derive chiefly from oxidation of motor oil, but recent studies indicate that the fuel is a major source of "resins". To review briefly the reasons for the newer belief on the source of "resins," sludge deposits are encountered most frequently in engines which are operated in moderate or light-duty service, where oils of good quality (such as the additive-treated, stabilized premium and heavy-duty oils) do not get hot enough to oxidize and form any appreciable "resins". Improved oils of these types will withstand engine operation under extremely severe high-temperature conditions, with little or no "resin" formation, so it becomes questionable that "resins" could develop under such milder engine service where engine temperatures are more often too low rather than too high.

The only other possible source of "resins" thus is the fuel. Crankcase oils in engines running in light or moderate service almost invariably contain from 1 to several per cent of fuel dilution along with the other combustion contaminants. However, this dilution fuel is not the same fuel as is in the gas tank. Unburned fuel which washes past the pistons to become oil diluent has been subjected to the high temperatures and pressures of the engine combustion chambers and thus has become "cracked," partially oxidized, or otherwise altered in chemical composition. This chemically altered fuel may readily undergo further oxidation and change while in the crankcase to form gums and "resins".

It is interesting that at least one petroleum refiner manufactures synthetic resins, which are sold to paint and varnish makers, and which are derived as a by-product from the thermal cracking processes used to produce motor gasoline. This fact seems to supply ample evidence that "resins" found in crankcase oils and sludges can be produced from fuel which has become thermally altered in combustion chambers.

Returning to Table 1, the composition of engine sludges is remarkably similar whether the sludge is of the hard or grainy or pasty variety. The essential difference is generally that the harder sludges contain less water and oil and larger concentrations of soot, carbon, lead salts and "resins." As a further illustration of this similarity, samples of typical pasty sludges and of grainy "coffee-ground" sludges were placed in an oven over night at 220 deg. F. Practically all of these samples converted to hard, coke-like masses after this heating and resembled closely the hard, lumpy sludge shown in Fig. 1. Apparently, drying out and leaching of some of the oil from soft pasty sludges, causes them to set-up and harden to granular or coke-like masses.

(TURN TO PAGE 102, PLEASE)



Contents . . .

Rotary Air Compressor—what it does, how it operates, how the air is freed of oil, compressor lubrication, temperature control, inherent advantages of rotary-type compressor. cross-section drawings of compressor showing pumping and non-pumping cycles.

Wagner Power-Cluster—its use and advantages, cutaway drawings, graph showing ratio of air pressure to hydraulic-line pressure. Air Power Cylinders—engineering features, cross-section drawing. Air Valves—foot-operated type, hand-control type, treadle-type, lever-type, push-type, quick-release, and emergency. Slack Adjuster—Hydraulic Cam-Brake Actuator—Valves, Couplers, Switches, Gauges, Fittings, Reservoir, Etc.

Schematic Diagrams of Wagner Air-Hydraulic Brake System for commercial vehicles equipped with internal hydraulic brakes, Wagner Straight-Air Brake System for commercial vehicles equipped with cam brakes, WagnerAir-Hydraulic Brake System for tractor-trailer train, and Wagner Straight-Air Brake System for tractor-trailer train, air-actuated cam brakes.

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Perhaps the most interesting feature of the bulletin is the discussion on the Wagner Rotary Compressor for air-brake systems, this compressor being one of the most outstanding developments in the field of automotive air-brake equipment. Drawings and cutaway photographs clearly illustrate the rotary principle used by this new-type compressor, and complete information is given on its construction and performance characteristics.

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K46-9

8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 100)

Crankcase Oil Contamination

ALTHOUGH much has been written on contamination of crankcase oils with combustion chamber blow-by products, the general impression seems to exist that oil contamination occurs only in rare and extreme cases. It can be stated, however, that oil contamination is much more prevalent than is generally suspected.

Tables 2 and 3 show analytical data on 640 crankcase oil drains collected from passenger cars, trucks and buses operating under a wide variety of conditions. Although 640 drains is a small percentage of the millions of crankcase drains made each year, an endeavor was made to apportion the samples representatively among the various types and conditions of vehicle operation, and this collection might be considered as a miniature "Gallup Poll" of crankcase drains. It is believed the results can be taken as fairly typical of what, beside oil, is in engines on the road.

Table 2 shows occurrence of fuel and water contamination in the 640 drain samples. It appears that the oil in the average or typical engine on the road contains from 1 to several per cent of fuel dilution and, of more importance, that a significant percentage of the samples contain excessively high amounts of fuel. When it is considered that this fuel contamination consists of unstable, thermally disrupted hydrocarbons, the occurrence of "resins" in engine sludges is not surprising.

Fortunately, the majority of crankcases on the road seem to contain little or no water contamination. However, a significant number do contain upwards of 1 per cent of water and these are in the danger zone where sludge formation can be expected to develop. It is a fortunate circumstance that water contamination is not more extensive in service, otherwise sludge troubles could well be more of a problem than they now are.

Table 3 shows occurrence of solids contamination (lead salts, soot, carbon and dirt) and of "resins" in the 640 drain samples. Again, the average or typical crankcase oil in engines on the road is indicated to contain from a few tenths to 2 or three per cent of solid contaminants, and a significant number contain excessive amounts, exceeding 2 or 3 per cent solids. Certainly, oil containing such amounts of solid contaminants is not a good lubricant and is most susceptible to separation and coagulation of these solids into sludge deposits.

(TURN TO PAGE 105, PLEASE)

TABLE 2—ANALYSIS OF 640 CRANKCASE OIL DRAINS

Fuel Dilution		Water	
Nil	2%	Nil to Trace	72%
0 to 2%	32%	.05 to .2%	9%
2 to 4%	38%	.2 to .5%	10%
4 to 6%	15%	.5 to 1%	3%
6 to 8%	5%	1 to 2%	2%
8 to 10%	3%	2 to 3%	1%
Over 10%	5%	Over 3%	3%

TABLE 3—ANALYSIS OF 640 CRANKCASE OIL DRAINS

Solids Contamination		Insoluble "Resins"	
0 to .5%	16%	Nil to .2%	40%
.5 to 1%	13%	.2 to .4%	34%
1 to 2%	34%	.4 to .6%	11%
2 to 3%	20%	.6 to .8%	6%
3 to 4%	5%	.8 to 1%	4%
4 to 5%	4%	1 to 2%	3%
Over 5%	8%	Over 2%	2%

"Why you blind —— —— ——!"

8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 102)

The "resin" content of crankcase oils in service evidently varies from a trace up to ½ per cent in the average or typical case. Again, a small but important percentage contain excessively high amounts of "resins" to an extent where sludge troubles are certainly incipient.

If the data from the 640 drain samples are accepted as reasonably typical of service, it appears the average crankcase oil contains at some time during its life:

Fuel Dilution	1 to 5%
Water	Trace to ½%
Solid Contaminants	Trace to 2%
"Resins"	Trace to ½%

A small, but nevertheless important, percentage of crankcase oils in service accumulate excessive amounts of contaminants in the order of:

Fuel Dilution	5 to over 10%
Water	½ to over 3%
Solid Contaminants	2 to over 5%
"Resins"	½ to over 2%

Obviously oil in such condition can lead to little but trouble and sludge formation.

It can truly be said that good oils don't "wear out" but they can be contaminated to death.

Viscosity Changes in Service

TABLE 4 shows change in viscosity of 264 crankcase drain samples from a variety of passenger car, truck and bus engines, where the viscosity of the original oils was known within close limits.

TABLE 4—VISCOSITY CHANGE 264 CRANKCASE DRAINS

0 to 15% Increase	2%
0 to 15% Decrease	40%
15 to 30% Decrease	36%
30 to 50% Decrease	16%
Over 50% Decrease	6%

It is indicated that viscosity increase or thickening of oil during use occurs in but few instances, and that the degree of increase is small.

On the other hand, a large percentage of the drains show a very significant loss of viscosity. This is tied in directly with fuel dilution. Since fuels have very low viscosities, even relatively small amounts of dilution cause marked viscosity loss in the oil. As indicated, in those instances of excessive dilution with fuel, the oil may lose half or more of its viscosity. In the case of SAE 10 and SAE 20 oils, as widely used in winter, viscosity loss of this degree may well interfere with adequate engine lubrication.

Causes of Sludge Deposits

IT IS evident that the prime cause of engine sludge deposits is oil contamination with combustion chamber blow-by products. The question then becomes "Why blow-by?"

Present-day engines and cooling systems apparently are designed to avoid all possibility of overheating, such that the oil will not get smoking hot and the coolant boil over in operation at maximum speed and load in the hottest summer temperatures. As a result, many engines are overcooled in moderate or light-duty service.

If engine cylinder walls operate at low temperatures because of excessive cooling system capacity, they act as condensers for the combustion gases, causing liquid water, unburned fuel, soot, carbon and lead salts to impinge on the oil films and then wash down past the pistons into the crankcase.

If engine crankcase temperatures also are low, due to excessive cooling, the vola-

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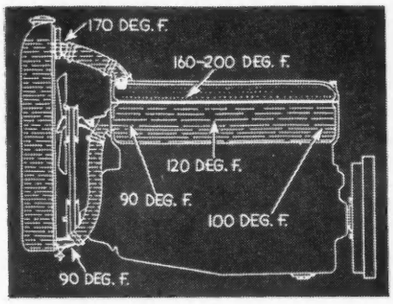

A typical engine cooling system and operating temperatures. High head temperatures do not necessarily mean high temperatures throughout block

8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 105)

tile contaminants cannot be purged out through the ventilating system and remain in the oil. Likewise, if the engine ventilating system is inefficient, the purging action and removal of volatile contaminants is correspondingly limited. Crankcase oil temperatures in engines on the road tend in all too many cases to be much too low to permit adequate purging of volatile contaminants. Also, most engine ventilating systems function effectively only at fairly high road speeds and become very inefficient under low speed or idling conditions. A combination of low crankcase oil temperature and poor ventilation thus means that the blow-by contaminants which enter the crankcase stay there and accumulate.

Heat Distribution Often Poor

IT IS noteworthy that heat distribution in many engine blocks is poor, so that cylinder wall temperatures may be undesirably low even though the dashboard temperature gage, which reads cylinder head temperature, registers satisfactorily high. Fig. 3 illustrates a typical engine cooling system and typical operating temperatures frequently encountered. As shown, heat is dissipated from the combustion chambers through the cylinder head and head coolant temperatures are high. The hot coolant then flows to the top of the radiator and is cooled down close to atmospheric temperature as it reaches the bottom. The cold liquid then flows to the lower part of the cylinder block. Since very little engine heat is dissipated through the cylinder walls, the coolant warms up but little until it again reaches the head. Consequently, high head temperatures do not necessarily mean high temperatures throughout the engine jackets, and cool cylinder walls mean condensation of combustion products and then oil contamination.

DIESEL ENGINE SLUDGES

Diesel engines are subject to the same sludge troubles as gasoline engines. Following is analysis of a typical diesel engine sludge, as removed from the crankcase and oil filter of a badly fouled engine:

Oil	42.%
Water	3.%
Soot & Carbon	34.%
Lead Salts	Nil
"Resins"	19.%
Iron, Silica	2.%

It will be noted that the composition of this sludge is very similar to gasoline engine sludges outlined in the article. The only significant differences are the absence of lead salts and the high amount of "resins".

Diesel fuels require near perfect conditions to assure good combustion. Any engine factor which interferes with good combustion of the heavy fuel immediately results in poor burning and formation of large volumes of soot. It has truly been said that a black diesel exhaust means a badly sludged engine.

It is, accordingly, imperative that Diesel injectors and nozzles be kept clean, free and in perfect working condition.

Mechanism of Sludge Formation

IT IS possible to theorize with a fair degree of accuracy on the mechanism of sludge formation in engines.

If an engine is operated with low cylinder wall temperatures, condensation and washing of combustion chamber products past the pistons causes oil contamination. If the crankcase temperatures are also undesirably low, and if the engine also suffers from poor ventilation, moisture and volatile fuel contamination cannot be purged from the oil. The blow-by contaminants in the oil then accumulate and increase in quantity until a critical point

(TURN TO PAGE 108, PLEASE)

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8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 106)

is reached where they begin to coagulate and separate out as sludges.

In this first phase of formation, the sludge is most probably of the soft pasty type and can be readily carried by the oil to those parts of an engine where oil flow is slow or restricted and where the sludges can then settle out and deposit. This would account for the accumulation of deposits in such places as valve galleries, overhead rocker-arm compartments, timing gear cases, crankcase sumps, oil filter housings, oil pump screens, etc.

Once sludge deposits have formed, they may gradually dry out or bake and become converted to granular "coffee grounds" or to hard lumpy masses. This condition may develop most readily in engines in intermittent types of operation wherein part of the time they run under light load and part of the time under heavy service. Under the light load operation, meaning low engine temperatures, the sludges develop, and with later operation under heavy load, with correspondingly higher engine temperatures, drying and baking would occur with formation of "coffee-grounds" or hard deposits.

Piston Ring Deposits

ONE of the most prevalent forms of engine sludge deposits is the plugging of piston oil rings and ring grooves. In many cases, ring grooves and oil rings become completely plugged to the point they become inoperative, and excessive oil consumption then develops.

Following is analysis of typical piston ring deposits:

Oil	19%
Water	Nil
Soot & Carbon	23%
Lead Salts	46%
"Resins"	11%
Iron & Silica	1%

Ring deposits, like other engine deposits, consist largely of blow-by contaminants. The low oil content and the absence of water in the ring deposits are most probably due to heat and "baking," since pistons are the hottest part of an engine under steady operation. The very high lead salt content of the ring deposit is also noteworthy.

One very interesting factor concerned with piston ring plugging is the matter of ring design. Fig. 2 on Page 57, shows two pistons taken from the same engine which happened to have the pistons fitted with two different types of oil rings at the time of an overhaul. After 20,000 miles of operation in light-duty service, favoring high rates of blow-by and oil contamination, the one design of oil ring was completely plugged with deposits. The other type of ring, although somewhat dirty, was still adequately free and open to function satisfactorily.

This factor of ring design was discovered more or less accidentally in our engine test work. But, once noticed, it seems quite obvious that oil rings containing small openings or restricted passages will plug up much more readily than rings having wide slots and a minimum of restrictions.

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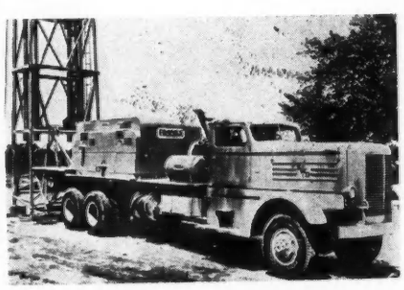

This FWD truck Model 6 x 6B is equipped with a Franks servicing rig for oil field work. Owned by the Shell Oil Co., the unit is now operating in California. The truck is 108 in. in height, 467⅜ in. long and is equipped with an engine developing 250 b.h.p. The top of the radiator is 87¼ in. from the ground. A fleet of such trucks—the largest units ever built by FWD—was delivered to the Owens Drilling Co., Richfield Oil Corp., and the Union Oil Co., in addition to Shell

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8 WAYS TO SLAP DOWN SLUDGE

(CONTINUED FROM PAGE 108)

Why Won't H-D Oil Cure Sludge?

HEAVY-DUTY detergent oils have received much publicity during the past few years and many statements and claims have been made on the ability of detergent oil to maintain sludges and contaminants in dispersion in the oil so that they will not coagulate or adhere to engine surfaces. Engine operators accordingly have reason to ask the "64 Dollar Question," "If all these claims about detergent oils are true, why won't they cure engine sludge deposits?"

Heavy-duty detergent oils do have the property of retaining sludges and contaminants in dispersion in the oil and a vast amount of experience has shown beyond question that H-D oils will aid greatly in minimizing sludge troubles and in maintaining cleaner engines in many operations. However, detergent additives used in H-D oils do not have an unlimited capacity to hold sludges and contaminants in dispersion.

Half a cup of salt cannot be dissolved in a cup of water whereas two or three spoonfuls will dissolve very readily. In the same fashion, detergent oils can hold reasonable amounts of "resins" and contaminants and prevent their separation as sludges, but, if the contamination develops to the extent of several per cent, as happens in all too many instances, the oil becomes taxed beyond its capacity, and coagulation and deposits are bound to occur. The effect of water contamination on detergent additives has been mentioned previously.

When engine operating conditions are such that excessively high rates of oil contamination prevail, oil alone cannot overcome or cure sludge formation and the oil must be given some measure of assistance to do the job for which it is intended. Eight such measures are outlined on Page 57.

It is evident from that list of preventive measures that a difficult situation develops when any engine or fleet is in sludge trouble, since the operator is called upon to make a number of rather extensive engine modifications. It can be said in such instances that the operator and the oil marketer servicing the operation are called upon to be automotive engineers and fabricators, in order to make the engine and the oil work satisfactorily.

With a more widespread appreciation of the causes of engine sludge deposits, it is to be hoped that engine manufacturers will take a greater interest in the problem and work toward engine designs which will maintain adequate jacket and crankcase temperatures in light and moderate duty service, just as they have succeeded in making engines which do not overheat in severe, heavy-duty service.

Perhaps we may look forward to the day when engines for light and moderate service will be designed with proper temperature and ventilation maintenance, either as built-in features or as special accessory equipment, so that owners and operators will not be called upon to make these modifications themselves.

If the future does bring engine designs which incorporate such improvements, many of the current sludge problems will be much alleviated. However, it must be remembered that higher engine temperatures will impose correspondingly severer conditions on the oil, and oils having superior stability and resistance to oxidation will be essential. The oil industry is prepared for this eventuality with improved, additive-treated oils of the premium and heavy-duty types, which are already being marketed.

In the meantime, it looks as if the sludge problem will remain with us and that oil marketers will still have the unhappy job of explaining the causes of sludge deposits to engine owners who experience this type of trouble.

END

(Please resume your reading on P. 58)

M. R. Pence has been appointed assistant sales manager in charge of the eastern half of the United States for Willys-Overland Motors, Inc., and Walter D. Appel has been named assistant to the vice president of engineering, in charge of product development.

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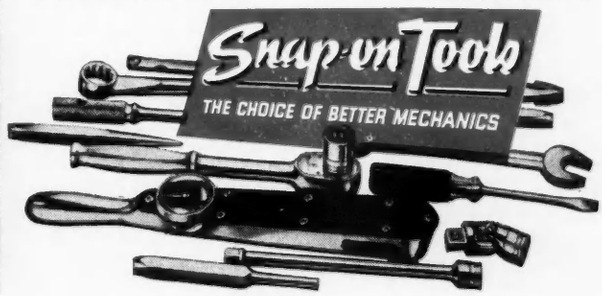


CCJ NEWSCAST

918,000 VEHICLES IN 6 MONTHS

While automobile manufacturers had scheduled output of 3,343,000 vehicles for the first six months of this year, a series of retarding factors curtailed production by 2,425,000 units according to George Romney, general manager of the Automobile Mfrs. Assn.

Production of new cars, trucks and buses totaled 918,000 units, or 27 per cent of expectations.

For the majority of companies strikes in suppliers plants caused the greatest proportion of damage to production schedules. The basic industries strikes, such as coal and steel, were heavy contributors to lowered production and restrictive governmental policies were substantial hindrances to production.

SEIZED TRUCK LINES EXPENSIVE

The federal government spent $1,567,684 in running expenses of the 103 truck lines seized in August, 1944, and released in October of 1945. The cost of possession, control and operation is figured at $354,698 from time of seizure until March 5, 1946.

CARRIERS SHOW DEFICIT

A total of 1811 Class I carriers of property operated in the last three months of 1945 at a final net loss of $11,869,376, according to a report from the Interstate Commerce Commission. This compares with a final net loss of $4,637,954 for the corresponding period of 1944.

FORD DEALERS REBUILD ENGINES

Ford engine rebuilding and reconditioning, once done at the River Rouge plant, has been transferred to retail dealer and distributor establishments.

The Ford Motor Co. prescribes the procedures and specifications required in rebuilding operations and sets up a list of necessary equipment the field shop must have to complete repairs. The dealer must set up some sort of progressive shop arrangement for moving assemblies from point to point. Some use channel iron rails in floors, while others resort to engine stands which can be moved from station to station. Certain cleaning equipment is also required by the company.

There are 235 dealerships engaged in Ford engine rebuilding at the present time. Prices for engine rebuilding in such shops run from $60 to $78, depending on local conditions. Prewar price of the same job completed at the factory was $49. Jobs are warranted for 30 days or 4000 miles, whichever scales.

RECIPROCITY RULES OUT TAX

A recent ruling of the Virginia Supreme Court of Appeals prohibits municipal taxation of interstate common carriers domiciled in states that have entered into motor vehicle reciprocity agreements with the State of Virginia. This new precedent was announced in the case of Brooks Transportation Co. vs. City of Lynchburg, which reinterprets prior direct legislation granting municipalities authority to levy mileage taxes on all common carriers in the light of the subsequent law permitting the Governor to enter into reciprocal agreements with other states.

1946 Civilian Truck Trailer Production*

Type	January	February	Total
Vans	2,777	1,885	4,662
Insulated	153	103	256
Refrigerated	280	66	346
Furniture	26	32	58
All Other, closed-top	2,116	1,624	3,740
Open Top	202	60	262
Racks	481	464	945
Cattle	286	263	549
Stake	195	201	396
Tanks	162	149	311
Petroleum	75	84	159
Other	87	65	152
Pole and Logging	336	382	718
Single axle	247	327	574
Tandem axle	89	55	144
Platforms	787	381	1,168
Low-bed haulers (over 15 ton)	163	116	279
Off-highway	46	37	83
Dump	39	54	93
All Other	77	72	149
Total—All trailers	4,868	3,540	8,408

*—Latest information available from Bureau of Census, Department of Commerce.

ROADEO CONTEST OCT. 8

American Trucking Assn's. National Truck Roadeo, suspended during the war, will be revived Oct. 8 during the annual ATA convention in Chicago, according to announcement by Charles G. Morgan, Jr., director of ATA's safety and operations section, who stated the roadeo will be the featured highlight of the convention. Winners of State Roadeos will compete in the national event which will include operating tests in the following classes: straight truck, tractor and semi-trialer, and truck and full trailer, with highest honors going to three winners.

AUTOLITE SAFETY AWARDS

The Electric Auto-Lite Co. is again presenting awards to winners of the nationwide Truck Safety Contest sponsored by the American Trucking Assn., it has been announced by F. A. Nealon, sales manager of the Merchandising Division of Auto-Lite. The new contest, which is the thirteenth annual one, started on Aug. 1.

Prizes for the contest just ended will be full-toned portable AC-DC radios for first place. Second place awards will be Swiss alarm clocks with illuminated dial and plastic case. In addition, the usual special safety certificates will be presented.

The awards will be made to fleet safety directors or the person responsible for the safety record. They will be made during the annual ATA convention.

FORD USES PRESSURE COOLING

By use of a pressure cap, Ford Motor Co. engineers have sealed the radiator so that the coolant may be kept under 3½ to 4½ lb. pressure. As the pressure is increased, boiling point of the coolant is increased, thus the engine continues to operate efficiently even though adverse conditions push temperatures 12 to 15 deg. over the normal boiling point. Use of the cap also reduces evaporation and in winter, antifreeze losses are lessened.

J. F. WINCHESTER RETIRES

J. F. Winchester, sales engineer of the Standard Oil Co. of New Jersey, retired recently after 33 years of service. He continues as a director in the Davisbilt Products Co.

Mr. Winchester has been a leader in the Society of Automotive Engineers and has served continuously in the New Jersey Motor Truck Assn., which he helped to organize. He helped to form the American Trucking Assns. in Washington, D. C., and was treasurer and vice-president of ATA for many years. The National Council of Private Carriers was organized through his efforts.

CHESTER MFG. CO. REORGANIZES

The Chester Mfg. Co., Lisbon, Ohio, manufacturer of chain hoists, trolleys, etc., recently became incorporated as Chester Hoist Co.

(TURN TO PAGE 114, PLEASE)

with VICKERS Hydraulic POWER STEERING

Just two fingers turn the steering wheel and the front wheels follow *exactly* . . . the Vickers Hydraulic Power Steering System does the work instead of the driver. And this heavy truck steers just as easily over rough ground as on smooth pavement. No shock load can be transmitted from the front wheels back to the steering wheel . . . thus relieving the driver of considerable fatigue resulting from constant road shocks he must absorb with the conventional mechanical steering gear.

Among the many other advantages of Vickers Hydraulic Power Steering are: easy application to existing chassis designs, automatic overload protection for both steering linkage and hydraulic system, wheel "fight" is impossible, automatic lubrication, and 14 years of successful operating experience on trucks, buses, road machinery, etc. For all the facts about Vickers Hydraulic Power Steering, ask for the new Bulletin 44-30.

VICKERS *Incorporated* • **1418 OAKMAN BLVD.** • **DETROIT 32, MICHIGAN**

Application Engineering Offices: CHICAGO • CLEVELAND • DETROIT • LOS ANGELES • NEWARK
PHILADELPHIA • ROCHESTER • ROCKFORD • TULSA • WORCESTER

CCJ NEWSCAST

(CONTINUED FROM PAGE 112)

HIGHER CEILING FOR OILS

All sellers of lubricating oils and allied products whose prices are frozen below their state Fair Trade Act levels have been authorized by OPA to apply to their regional offices for higher ceilings, the pricing agency says.

The order applies to all sellers of these products except retailers who had already been granted this permission in June, 1944.

94% Natural Rubber for Large Truck Tires

Truck and bus sales will receive a substantial share of the 11,000 additional long tons of natural rubber which will be made available to industry each month in the second half of 1946, W. James Sears, Director of Civilian Production's Rubber Division, has announced.

Pneumatic casings with cross section of 8.25 in. and larger of both highway and mud and snow tread design may be made with 94 per cent natural rubber.

Smaller truck and bus tires and smaller size special purpose tires of 7.50 in. and smaller will hereafter contain 67 per cent of natural rubber. Formerly various tires in this group contained 13, 23 or 33 per cent natural rubber. These tires will have no special identification hereafter in the way of a letter or number marking.

During the war, because of the acute shortage of natural rubber and because synthetic rubber lacked resistance to heat build-up, it has been freely admitted that truck and bus tires were not capable of giving prewar performance. The previous increase of natural rubber for truck and bus tires, permitted last March, put an improved tire on the road for the present hot weather driving. The additional amounts of natural rubber authorized recently will add somewhat to tire performance in some of the types and sizes.

Passenger car tires now may be made with as much as 13 per cent natural rubber as against 2.5 per cent previously permitted. This additional natural rubber will alleviate many of the manufacturing and processing difficulties that have been encountered with the present all-time high production rate, and the number of defective tires that have to be discarded in factories will be lessened.

There is no change in the restriction that all pneumatic tires shall be manufactured with black sidewalls only, it is revealed. Camelback for the recapping of large truck tires 14 in. and up, may now be made of all natural rubber.

WALKER OPENS PHILA. BRANCH

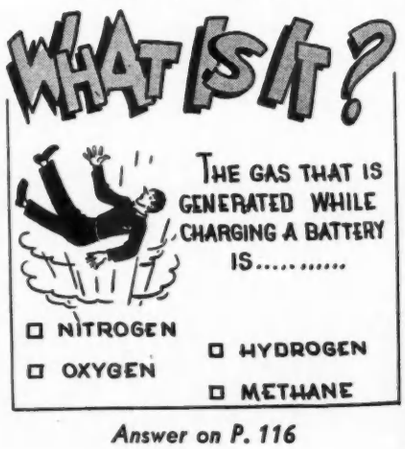
The Walker Mfg. Co., Racine, Wis., has opened a new factory branch and service station at 4233 North Park Ave., Philadelphia, Pa.

REO LITTLE ROCK DISTRIBUTOR

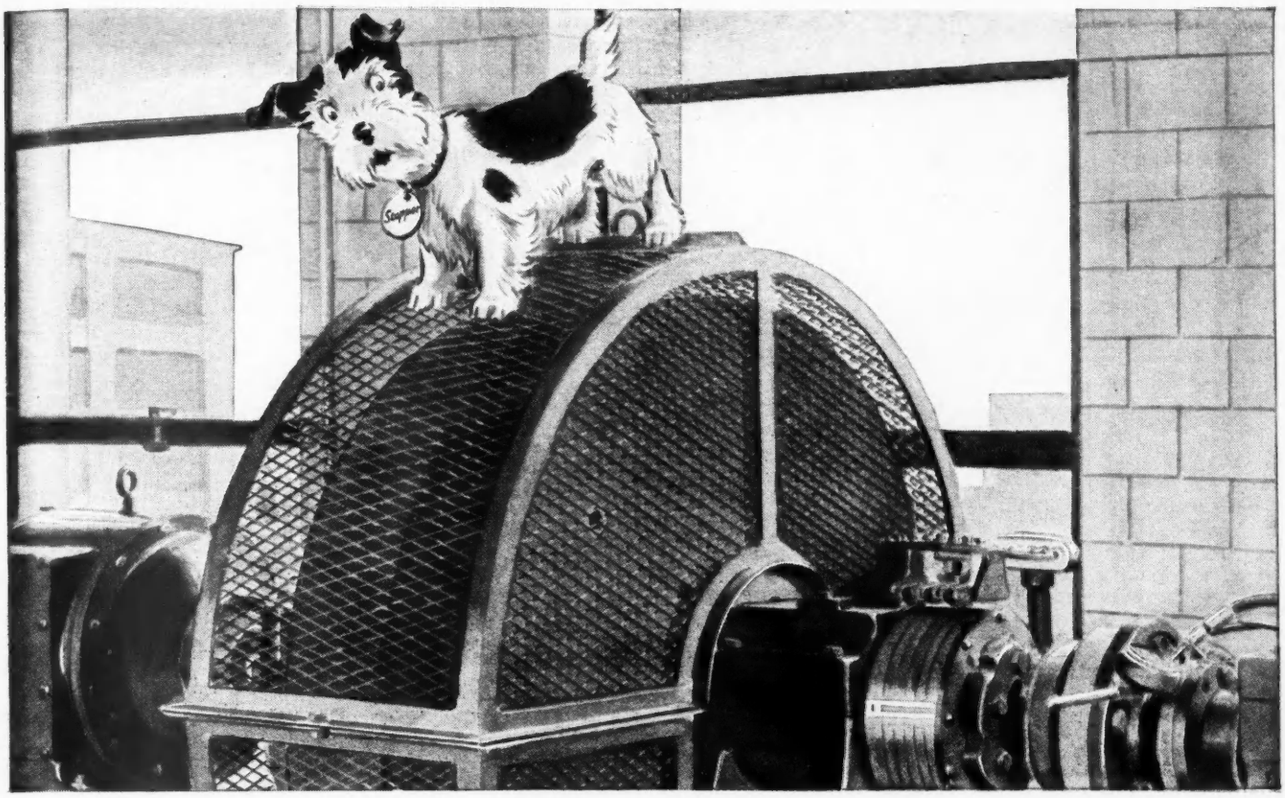
The Reo T ıck & Bus Sales Co. of Arkansas, Inc., of Little Rock, Ark., has signed a contract with Reo Motors, Inc., as distributor for Reo trucks and buses in 56 counties in the State.

The Reo Truck & Bus Sales Co. has incorporated for $100,000, with George F. Forbeck, president and treasurer; J. George Porbeck, vice-president; T. H. Baxter, vice-president, and C. R. Thomas, secretary. Miles Boone has been appointed general sales manager.

(TURN TO PAGE 116, PLEASE)



Answer on P. 116



"Let's see you ride this to Buffalo," I said

I WAS FOLLOWING a friend of mine who usually has candy. He went into one of the American Brakeblok testing laboratories.

He looked at a big contraption, then glanced down at me and said, "Stopper, do you know what that is?"

"No, sir," I said politely, still figuring on the candy.

Then he said, "It's a Greyhound Bus!"

"Oh, yeah!" I barked back. "Let's see you ride it to Buffalo."

Then he explained that it is a dynamometer. It was testing brake lining under the exact conditions to be found on the left rear wheel of a bus.

What a beating that lining took! *Once every minute* the machine revved-up to the equivalent of 60 miles an hour—then snubbed down to a dead stop. Man, that's punishment! But it is one of the many ways American Brakeblok test their brake lining to make sure it is *the best that can be made*—long before it reaches a car, truck or bus.

That's why you do your customers a favor when you install American Brakeblok Brake Lining. That's why so many dealers, fleet operators and manufacturers look to American Brakeblok for the *best* answer to all brake lining problems.

AMERICAN Brake Shoe COMPANY

Distribution through 38 NAPA Warehouses

NAPA Assurance of Quality

American Brakeblok BRAKE LINING

AMERICAN BRAKEBLOK DIVISION, DETROIT 9, MICHIGAN

CCJ NEWSCAST

(CONTINUED FROM PAGE 114)

GOODRICH BUILDS CAR WITH RUBBER SUSPENSION

A hand-built passenger automobile has been designed and engineered by The B. F. Goodrich Co. to "take full advantage of the inherent possibilities" of its Torsilastic spring.

Primary objectives of the new springing —particularly for light-model autos—that B. F. Goodrich engineers feel can be achieved through the torsion rubber spring, are "an inherently low degree of harshness and low noise level," more comfortable riding, minimum of maintenance, and long life with low operating cost.

One of the features of the demonstration car is a constant-level device applied to all four wheels, to hold the chassis at a designed level regardless of load changes. Torsion-rubber suspension lends itself particularly well to the use of constant-level mechanism, the manufacturers claim.

15 NEW FRUEHAUF BRANCHES

Fruehauf Trailer Co. announces the completion of new factory branch buildings in nine major cities, with work in progress or plans drawn for new branches in six other cities throughout the company's network of over 60 factory branch outlets. New branch buildings are completed or nearing completion in Philadelphia, Norfolk, Richmond, Cleveland, Milwaukee, St. Louis, Kansas City, San Antonio and Fresno. Service facilities in Detroit and Chicago are more than doubled by large additions to these branches. Requests for C.P.A. approval have been submitted or approved for new buildings in Akron, Denver, Des Moines, Oklahoma City, Flint and Peoria. Arrangements are also being made for additional sales and service facilities in Charleston, W. Va.; Kearny, N. J.; Springfield, Mass.; and New Haven, Conn.

LETSINGER RETIRES AS HEAD OF CUMMINS DISTRIBUTION

Paris E. Letsinger has been elected a director of the Cummins Engine Co., Inc., Columbus, Ind., following his retirement as vice-president in charge of distribution because of his health.

Mr. Letsinger, connected with the company for 13 years, played an important part in the growth of the Cummins Engine Co., pioneer in the development of the high speed diesel.

One of Mr. Letsinger's most significant contributions was his part in the establishment of the Cummins sales and service policy. Beginning in a new indusry, he set about to establish the practicability of the principle that superior service must come before sales. With that principle, and one small dealer, as a starting point, he formulated the company's existing distribution policy and established a program based on two fundamental points; (1.) that Cummins must accept continuing responsibility for the successful operation and performance of Cummins' engines in whatever equipment they might be placed and wherever operated; and (2.) that the final *user* of the engine is the man who must be satisfied, the man to whom all policies and plans must be directed.

As a result of the adoption and successful execution of this sales and service policy, the Cummins distribution organization today includes more than 140 domestic dealers and dealer branches, plus 28 out lets in foreign countries.

APPOINTED B-W DISTRIBUTORS

Truck Garage & Supply Co. of Indianapolis, Ind., Tomlinson Brake and Spring Service of Lima, Ohio, and Ashton and Boyce of Erie, Pa., have recently been appointed "A" distributors for Bendix-Westinghouse air brakes and pneumatic control devices.

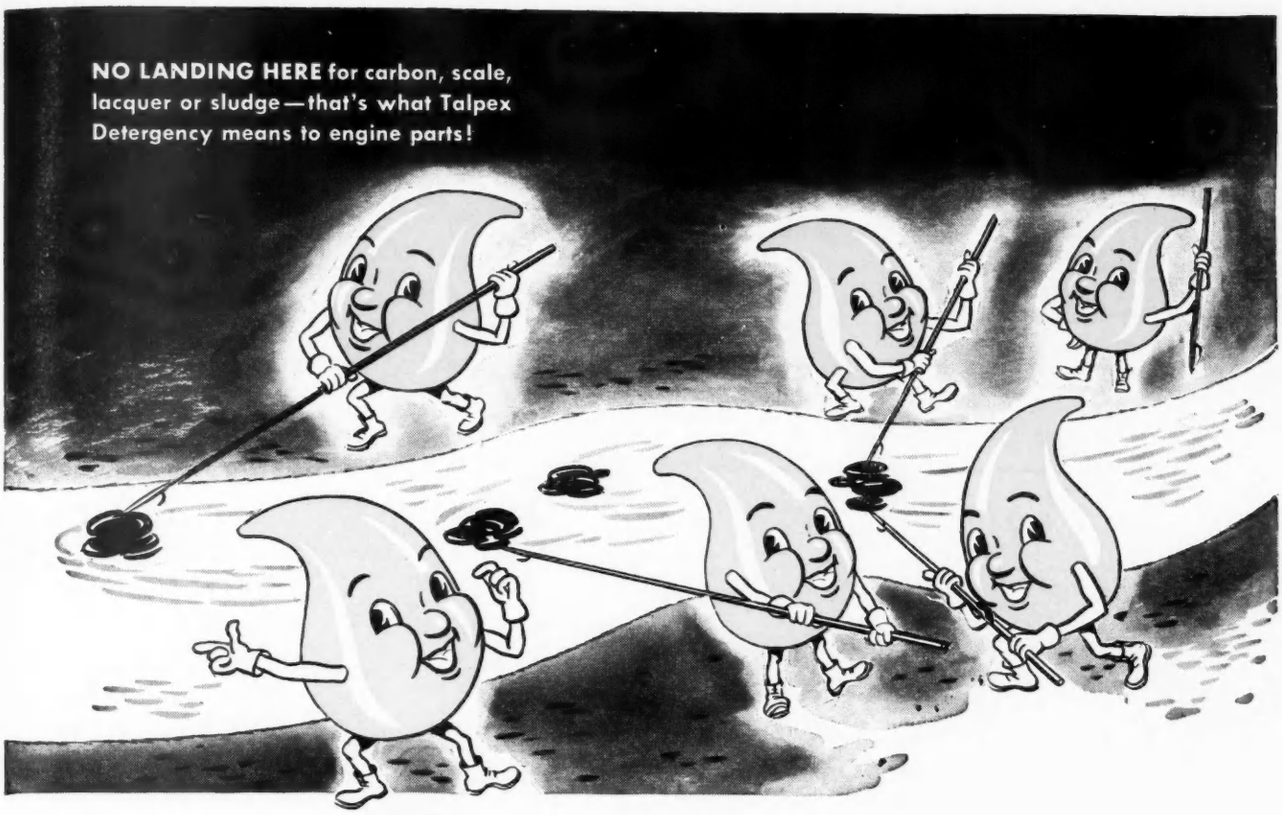
(TURN TO PAGE 118, PLEASE)

● WHAT IS IT?

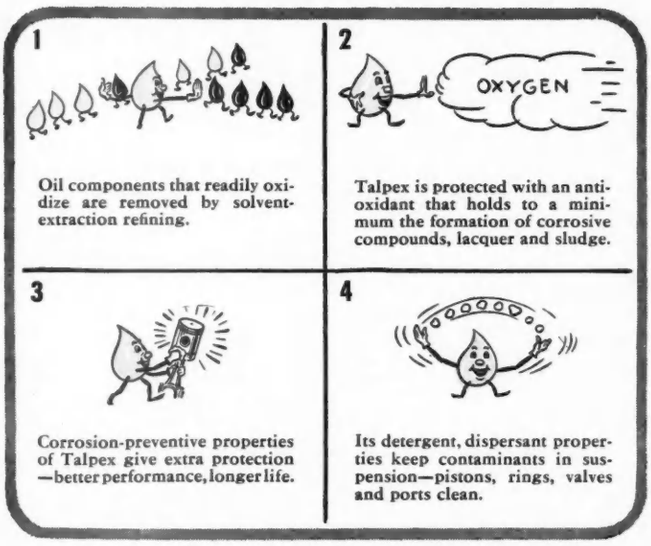
ANSWER... (To Question on P. 114)

Hydrogen, which is highly explosive. Sparks and flames should be kept away from the battery.

(Another Cartoon Quiz is on P. 118)



THESE FOUR *TALPEX* PERFORMANCE FACTORS SAFEGUARD HIGH-SPEED DIESELS



TALPEX has detergent properties that keep such contaminants as sludge and lacquer from depositing on pistons, rings, valves and ports. Not able to land at their favorite spots, they circulate with the oil until drained from the engine.

If the oil you are now using doesn't have detergent properties—if it hasn't been doubly protected against oxidation—if it doesn't have special corrosion-preventive properties—then you had better change to Talpex.

The Shell Lubrication Engineer will give you sound advice about the lubrication of *any* type of Diesel, whether slow, medium, or high speed.

Write for a copy of Shell's booklet, "The Fundamentals of Diesel Lubrication." Shell Oil Company, Incorporated, 50 West 50th St., New York 20, N. Y. or 100 Bush St., San Francisco 6, Calif.

SHELL

SHELL DIESEL LUBRICANTS

CCJ NEWSCAST

(CONTINUED FROM PAGE 116)

PAEA MOVES TO STANDARDIZE AIR COMPRESSOR SPECIFICATION

A. H. Dickmeyer, sales manager of The Wayne Pump Co., was recently elected president of the Pneumatic Automotive Equipment Association at its annual meeting. Membership in this association is held by manufacturers and distributors of air compressors ranging from smallest sizes up to and including 10 hp. J. D. Lodwick, vice-president of Curtis Pneumatic Machinery Co., was elected vice-president, and J. P. Cooper, sales manager of Westinghouse Air Brake Co., was elected treasurer. Russel L. Sears, sales manager of Lynch Mfg. Co., was made member at large of the executive committee.

A program in cooperation with the Bureau of Standards of the U. S. Department of Commerce to standardize automotive air compressor specifications, is now under way and will be supported by a widespread advertising campaign in trade publications starting in November.

M. P. FERGUSON HEADS BENDIX

Malcolm P. Ferguson of South Bend, Ind., has been elected president of Bendix Aviation Corp. to succeed Ernest R. Breech, who has resigned, effective June 30, to become executive vice-president and a director of the Ford Motor Co.

URGE LEAD CEILING REMOVAL

Members of the Association of American Battery Mfrs. during their annual Spring meeting passed a resolution urging that the battery industry cooperate with the Lead Industries Asso. in an effort to remove the OPA price ceilings on lead, after the members had been informed that the "shortage today is purely artificial in that it is the result of certain Government controls."

EXPANDS RADIOPHONE SERVICE

Three more inter-city highways totalling over 800 miles in length have been added to the two previously announced routes on which the Bell System plans to provide mobile radiotelephone service to vehicles.

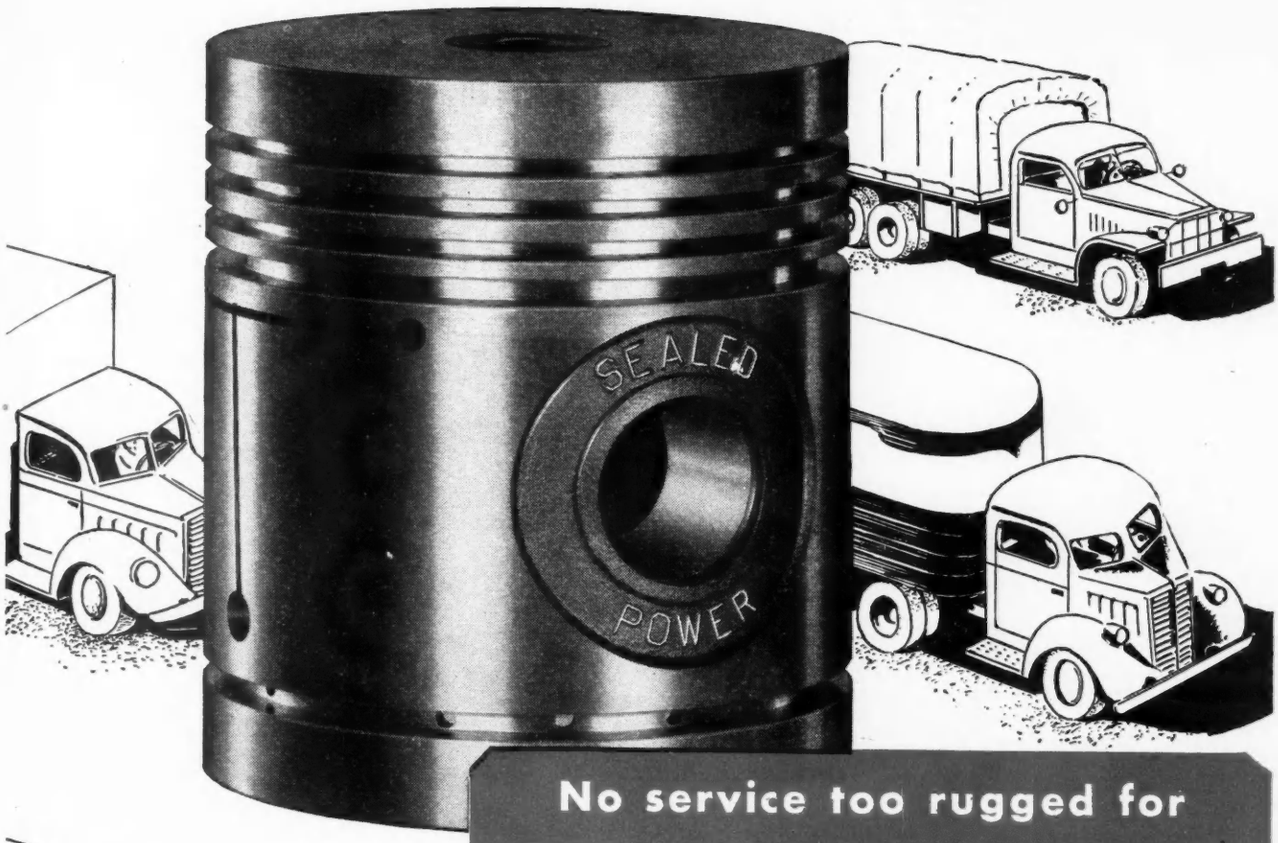
The American Telephone & Telegraph Co. has announced that applications have been made to the Federal Communications Commission for authority to construct transmitter-receivers along the highways between Washington and New York; Buffalo and New York, via Albany; and Los Angeles and San Diego. Permits to build transmitters and receivers for highway mobile radiotelephone service between New York and Boston and between Chicago and St. Louis already have been granted and construction of those stations is under way.

On the New York-Washington highway, it is planned to build transmitting and receiving stations near New Brunswick, Philadelphia, Wilmington, Baltimore and Washington. Those facilities will constitute an extension of the Boston to New York system.

Applications for Bell System highway mobile radiotelephone installations in a number of other cities are pending or in preparation. Those communities include Cincinnati, Green Bay, Cleveland, Columbus, Lansing, Saginaw, Grand Rapids, Rockford, Knoxville, Chattanooga, Charleston, Savannah, Jacksonville, Montgomery, Mobile, Baton Rouge, Shreveport, Little Rock, Tulsa and Austin.

(TURN TO PAGE 120, PLEASE)

Answer on P. 120



No service too rugged for

SEALED POWER

HEAVY DUTY

PISTONS

RUGGED INTERNAL CONSTRUCTION assures long life in heavy duty service, with extra metal added for correct heat transfer and extra strength.

●

FINEST ALUMINUM ALLOY #132 is used exclusively in Sealed Power Heavy Duty Pistons.

●

CAM GRINDING assures correct shape and increased bearing area at operating temperatures.

●

T-SLOT DESIGN assures lower and more uniform temperature throughout piston.

SEALED POWER PISTON RINGS

Keep your War Bonds!
Get $4 for $3!

IT WILL PAY YOU TO SPECIFY

SEALED POWER HEAVY DUTY PISTONS

SEALED POWER CORPORATION

MUSKEGON, MICHIGAN • STRATFORD, ONTARIO

CCJ NEWSCAST

(CONTINUED FROM PAGE 118)

AUTO-LITE APPOINTMENTS

Three promotions and five new territory representatives have been announced by The Electric Auto-Lite Co.

Raymond H. Huntzicker was named special representative in the Central Division and Fred Vanzo was named fleet representative in the same area. John C. McCleary was named district supervisor in the Midwest Division.

Territory representatives named were Joseph C. Eisbacher, Eastern Division; R. F. Maw and Keith Hamelen, Central Division; Dwight P. Payne, Southern Division and Paul A. Zody, Western Division.

IHC ANNOUNCES APPOINTMENTS

International Harvester Co. has announced the following changes in motor truck personnel: E. H. Watkins, as assistant manager, motor trucks, eastern district; R. R. Slater, as manager of the Syracuse motor truck branch; J. H. Shafer, as manager of the Portland, Oreg., motor truck branch; G. D. Partridge, as assistant manager, Cleveland motor truck branch. L. A. Hanson, as manager at Wichita motor truck branch. W. G. Schendel, as assistant manager of the Buffalo truck branch; G. D. McCarthy, and D. G. Barrett, as assistant managers of the Boston motor truck branch; J. T. Sullivan, as central district sales manager to succeed W. A. Riggs, who has been transferred to the northwest district; Mr. Riggs replaces R. R. McDonald as northwest district sales manager. Mr. McDonald has been appointed manager of the newly established motor truck branch at Salt Lake City.

58,820 CHEVROLETS FOR MAY

Despite restricting factors of national coal and transportation strikes, as well as a variety of tie-ups on the part of suppliers, Chevrolet during the month of May established a new high production record for the auto industry in its post-V-J Day history, producing 58,820 cars and trucks.

The 58,820 total includes 30,367 passenger cars and 28,453 trucks, The comparable monthly total for April, best previous post-war month production-wise, is 47,077 units.

BREWER & LE BLANC ORGANIZE

Lt. Col. Harold G. Brewer, Ordnance Dept. and Major Benjamin C. Le Blanc, Trans. Corps, released from the Army several months ago, and formerly well known Hudson County, N. J., truck and bus distributors, have organized Brewer & Le Blanc Motors, Inc., at 673 Montgomery St., Jersey City, N. J., with Brewer as president and Le Blanc as secretary. They will sell and service Reo and Ward La France motor trucks in Hudson County.

"WHIZ" MANAGERS NAMED

New division and district managers have been appointed to supervise distribution of Whiz Automotive products in 10 of the sales territories of the R. M. Hollingshead Corp., Camden, N. J., as follows:

Walter Chick, Western Division, headquarters in San Francisco; P. C. Franzini, Southwest Division, at Dallas; Earl C. Bittenbender, Philadelphia District; Richard W. Barry, Pittsburgh District; Thomas C. McMahon, Jr., Detroit District; C. L. Dilday, St. Louis District; Nelson R. Kincaid, Lansing, Mich., District; Richard J. Horsey, Chattanooga, Tenn., District; Wm. M. Pellman, Oklahoma City District, and Harry O. Bradberry, Amarillo, Tex., District.

(TURN TO PAGE 123, PLEASE)

● WHO IS IT?

ANSWER . . . (To Question on P. 118)

Henry Ford II. The Ford Motor Co. has purchased a war-worn C-47 that had flown supplies over the Pacific and had it made into a luxurious flying office for Henry Ford II.

(Another Cartoon Quiz is on P. 123)

CCJ NEWSCAST

(CONTINUED FROM PAGE 120)

RAYON FOR AUTO TIRES

Production of all sizes of passenger car tires of 6.50-16 size and larger, with an especially developed cord known as Rayotwist, made of rayon filaments, has been announced by The Goodyear Tire and Rubber Co. Heretofore, practically all passenger car tires produced in the industry were made with cotton fabrics.

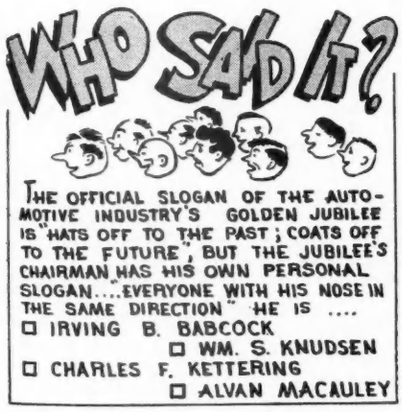
Claimed advantages of Rayotwist cord, which was developed from rayon filaments in Goodyear research laboratories, include the following: lighter but stronger than former cord; increased resistance to heat generation in high speed service resulting in improved tread wear; substantially increased tire mileage resulting from cooler running tire.

The Goodyear statement indicated that future production of Rayotwist tires would depend entirely upon the amount of rayon filament available and pointed out that present supply was limited to such an extent that continuous production of the sizes now being manufactured could not be promised definitely.

RICE JOINS WARD LaFRANCE

Appointment of W. P. Rice as general sales manager of Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y., is announced by A. A. Frank, vice-president and general manager. He will be directly in charge of all sales and service activities covering all products of the Division both domestic and export.

Mr. Rice entered the industry in 1921 with the Fageol Bus Branch in Oakland, Cal., later associated with GEIC and GMAC Divisions of General Motors and subsequently became a sales representative and manufacturers agent in the independent parts field. In 1938 he returned to GM with Chevrolet Motor Division, leaving the division upon outbreak of war to serve as assistant to the chief of industrial operations, Tank-Automotive Center, Ordnance Dept., Detroit. Upon completion of this service in 1943 he joined Willys-Overland as assistant to the general manager of the Jeep Division, with headquarters in Detroit, supervising war products sales.



Answer on P. 126

YOUNGREN, McCARROLL JOIN FORD MOTOR COMPANY

Harold T. Youngren has been appointed director of engineering of the Ford Motor Co. R. H. McCarroll, who has been executive engineer, was named director of chemical and metallurgical engineering and research.

Mr. Youngren comes to Ford from the Borg-Warner Corp., where he has been chief of engineering development since 1944.

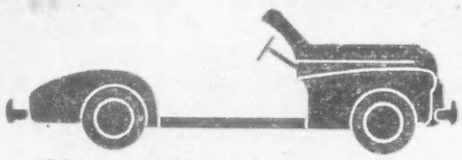
Mr. Youngren was chief engineer of the Olds Motor Division of General Motors Corp. for 11 years prior to joining Borg-Warner. He first joined General Motors in 1929 as assistant chief engineer of Buick. He previously had been consulting engineer of the Studebaker Corp.

PENNA. TIRE MOVES OFFICES

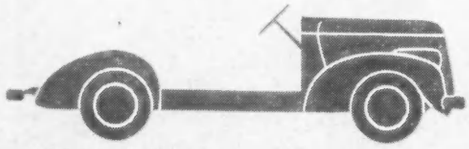
New locations for branch office and warehouse in New York City have been announced by the Pennsylvania Rubber Co. of Jeannette, Pa.

The New York warehouse is operating at Lehigh Warehouse Corp. of Brooklyn, 184 Kent Avenue, Brooklyn N. Y. The New York branch office is located at Pennsylvania Rubber Co., 33 West 60th Street, New York, N. Y.

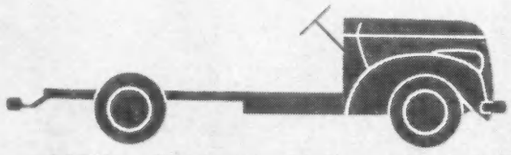
(TURN TO PAGE 126, PLEASE)



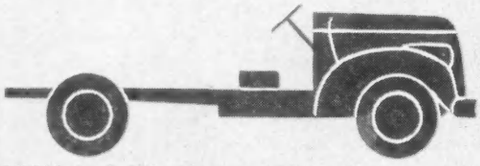
116-inch Wheelbase—One Model



115-inch Wheelbase—Ten Models

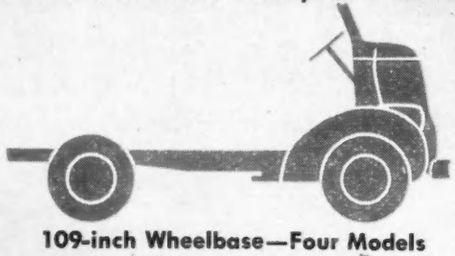


125¼-inch Wheelbase—Nine Models



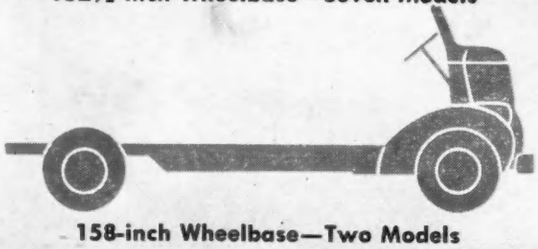
134½-inch Wheelbase—Thirty-four Models

160-inch Wheelbase—Thirty-one Models



109-inch Wheelbase—Four Models

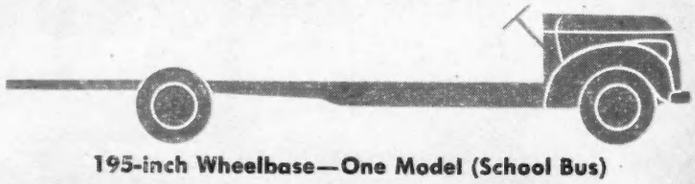
132½-inch Wheelbase—Seven Models



158-inch Wheelbase—Two Models

WHATEVER YOUR BUSINESS THERE'S A CHEVROLET TRUCK TO FIT YOUR HAULING NEEDS

99 MODELS
9 WHEELBASES



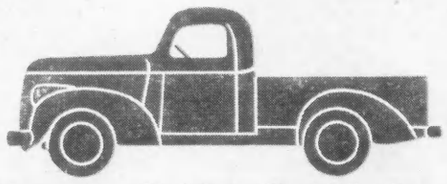
195-inch Wheelbase—One Model (School Bus)

CHEVROLET

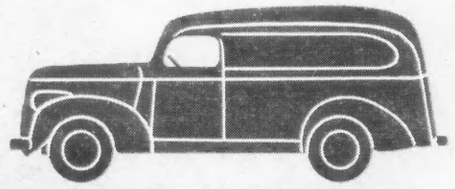
The only business that can't profitably use a Chevrolet truck is a business that needs no truck at all—for Chevrolet's expanded line, which now comprises 99 models on nine wheelbases, ranges from the beautifully styled Sedan Delivery to ruggedly massive models in the heavy-duty class. Newly added to the truck line are heavy-duty models of increased load capacity. . . . Among Chevrolet's 99 models on nine wheelbases—some with the standard Thrift-Master engine, some with the high-torque Load-Master engine—there is a truck to fit *your* requirements. . . . Whether you use a standard type of body, a special-purpose body, or specialized mechanical equipment, there is a Chevrolet to serve your needs and save you money.

CHEVROLET MOTOR DIVISION
General Motors Corporation
DETROIT 2, MICHIGAN

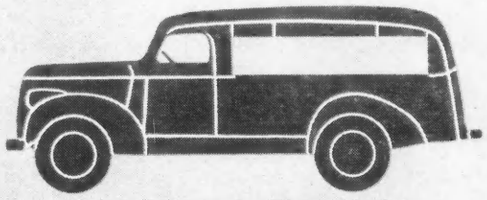
SEE YOUR CHEVROLET DEALER
HE CAN SUPPLY SPECIAL BODIES AND EQUIPMENT FOR ANY HAULING JOB



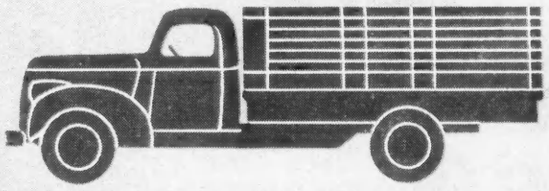
Pick-up—Four Models on Three Wheelbases



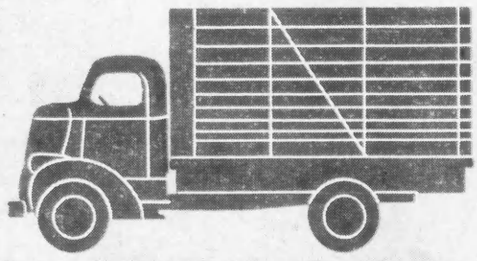
Panel—Five Models on Four Wheelbases



Canopy Express—Three Models on Two Wheelbases



Stake—Fourteen Models on Five Wheelbases



High Rack—Four Models on Two Wheelbases

CHEVROLET TRUCKS

PICK-UPS PANELS STAKES CAB-OVER-ENGINE TRACTOR-TRUCKS AND CHASSIS FOR SPECIAL EQUIPMENT

99 MODELS • 9 WHEELBASES • THE RIGHT TRUCKS FOR ALL TRADES

CCJ NEWSCAST

(CONTINUED FROM PAGE 123)

GAR WOOD BUYS PLANT

Gar Wood Industries, Inc., has expanded its manufacturing facilities by purchasing from the War Assets Administration the former Bendix plant in Wayne, Mich. The company will transfer all its Detroit operations to the new site with the exception of its body plant which will remain on Connecticut Avenue. When the new plant is in full operation, it is expected that Gar Wood employment in the Detroit area will rise to 3500 from the present total of 1500.

TRUCKSTELL ADDS GUARD

The Truckstell Co. has announced that the Champion Grille-Guard has been added to the company's line of special truck equipment items. Distribution is being handled by the Truckstell nation-wide distributor organization.

The Champion Grille-Guard protects a truck against damage to the radiator grille, the radiator and head lamps; in some cases of collision, it also reduces possible damage to the fan and engine.

Currently these grill-guards are being produced for conventional type trucks of the following makes and capacities: Ford, 1½ ton; Chevrolet, 1½ and 2 ton; Dodge, 1½ and 2 ton; International models K5, K6, and K7. In the near future they will be available for all other makes and models, both conventional and cab-over-engine.

AMERICAN COACH EXPANDS

The American Coach & Body Co., Cleveland, Ohio, announces the purchase of the inventories, designs, manufacturing licenses under patent, tools, and machines of the Bird-White Tower division of the Bird-White Co., Chicago, Ill. All operations will be moved to Cleveland, and the Bird-White Tower will be known as the American Tower Lift.

TIMKEN AXLE LEASES PLANTS

The Timken-Detroit Axle Co. has leased from the Government two new manufacturing plants. Already in production the two plants—a new forge plant and a new trailer axle plant—are located in Detroit, Mich.

THERMO OPENS CAL. OFFICE

As part of a nation-wide expansion program, the U. S. Thermo Control Co., Minneapolis manufacturers of Thermo King truck refrigeration units, announces the opening of a sales and service headquarters in Los Angeles.

UPS TAKES ON MACY'S

On June 27 United Parcel Service of New York took over the R. H. Macy delivery fleet of 500 trucks.

C. M. GILE NAMED TO GULF

Clement M. Gile has been elected vice-president of the Gulf Oil Corp. and the Gulf Refining Co., and also vice-president and a director of the Gulf Research & Development Co., succeeding W. V. Hartmann, retired. He will be in charge of marketing.

WORLD BESTOS MOVES WEST

The World Bestos Corp. closed its plant and offices at Paterson, N. J., July 1 and has moved to a new, larger factory at New Castle, Ind. The management personnel, headed by Donald H. Spicer, president, remains unchanged.

FRUEHAUF REPRESENTATIVE

Mountain State Industries, Inc., Charleston, W. Va., has been appointed service representative for the Fruehauf Trailer Co. in West Virginia and Eastern Kentucky, according to an announcement by A. K. Tice, vice-president in charge of sales of Fruehauf.

(TURN TO PAGE 128, PLEASE)

● WHO SAID IT?

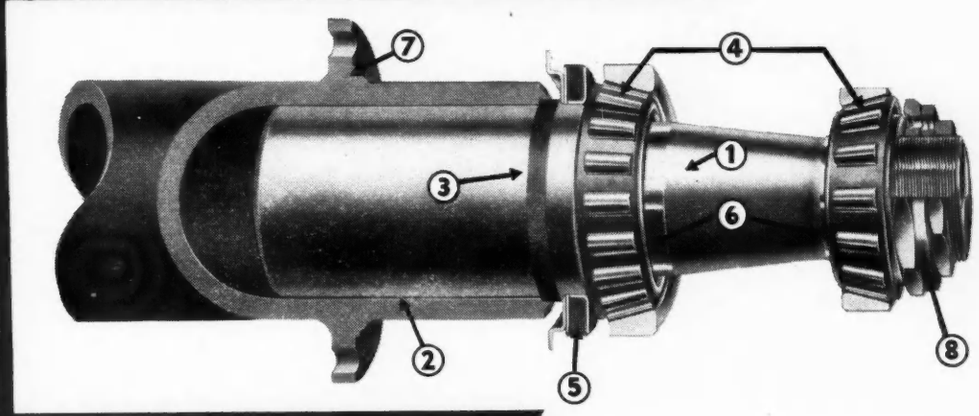
ANSWER . . . (To Question on P. 123)

Wm. K. Knudsen. He believes that if all groups — labor and management—pull together, the automotive industry can very soon return to peak production.

(Another Cartoon Quiz is on P. 128)

For "Blue-Chip" TRAILER PERFORMANCE

INSTALL Standard Axles WITH *Inserted* SPINDLES



Axles with *Inserted* Spindles are Better in 8 Important Ways!

1. Finest quality construction of heat-treated *solid* steel assures maximum strength.
2. Powerful hydraulic pressure secures spindles in axle tubing.
3. Safety flanges are provided for welding spindles to end of axle tubes.
4. Heavy duty tapered roller bearings are of the most popular sizes stocked by most bearing dealers. This assures ease of service at any trailer station.
5. Grease retainers are of standard type. They may be serviced at any trailer service station.
6. Precision grinding assures maximum spindle and bearing life.
7. Brake-attaching flange gives extra support to inserted spindle.
8. Positive-locking double spindle-nut permits close bearing adjustment and maximum safety. Easily serviced at any trailer station.

Be sure your axles are Standard! Write, wire or phone our Engineering Department for complete data!

Standard Forge & Axle Company

MONTGOMERY 2, ALABAMA

AXLES BRAKES FORGINGS TRAILER PARTS

CCJ NEWSCAST

(CONTINUED FROM PAGE 126)

WALL PAINT CHART AVAILABLE

The Rinshed-Mason Co., 5935 Milford Ave., Detroit, Mich., offers a new wall chart for paint shop use which lists all 1942 and 7946 principal automotive body colors by name, manufacturers' code number and the corresponding code number of the Rinshed-Mason line. Charts are available upon request.

PITTSBURGH DISTRIBUTOR

The Truck Trailer Sales and Service Co., 501-15 S. Negley Ave., Pittsburgh, Pa., has been designated as the Pittsburgh distributor for the American Bantam Car Co.'s line of Supercargo trailers.

Frank Salvatora, is the president of the new distributorship. Joe W. Edmundson is vice-president and general manager, and Adam Reitzel is the service manager.

OFFERS DRIVER TRAINING AID

"A safe driver drives defensively." That is the catch introductory statement in a new shirt-pocket booklet on safe driving prepared by the National Safety Council, Inc., Chicago, Ill.

This 26-page, illustrated publication entitled "Defensive Driving" is written in the language of the truck driver and is filled with humorous but attention-getting cartoons that help drive home important pointers on "defensive" or safe truck operation.

Complete information and prices may be obtained by writing to the Council at the above address.

NEW EATON INSTRUCTION BOOK

The Eaton Mfg. Co., Cleveland, Ohio, has published in transparency form "how to do it" booklets to show the inside story of the Eaton two-speed axle. In keeping with the modern trend toward visual methods in sales and service instruction media, Eaton uses 12 five-color pages printed on cellophane to literally take the Eaton two-speed truck axle apart and put it back together again.

MACK OFFERS SHIFT FOLDER

Single-lever shifting of 10 speeds, with pre-selection of the compound ratios by means of a flipper on the gearshift lever is announced by Mack Trucks, Inc., in a new 4-page folder entitled "The Mono-Shift Transmission." Copies of the folder may be obtained through Mack branches or its home office, Empire State Building, New York City.

WHEEL BOOKLET AVAILABLE

A 12-page bulletin entitled "Saving Tires by Blowing Out the Heat" has been made available to the fleetman by the Dayton Steel Foundry Co., Dayton, Ohio. This illustrated booklet shows detailed construction of the Dayton wheel and gives information on assembling, aligning and inflating. Other Dayton units featured are brake drums, pintle hooks, fifth wheels and landing gears.

FRUEHAUF CATALOG RELEASED

A 64-page catalog, complete with illustrations of the 1946 Fruehauf Trailer line, has just been released by the Fruehauf Trailer Co., Detroit.

The new book contains pictures and detailed descriptions of the six different underconstructions offered in the Fruehauf line, including the revolutionary new gravity suspension tandem and multi-rate single axle unit.

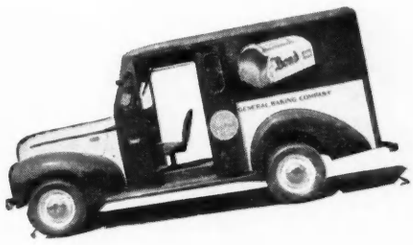
(TURN TO PAGE 130, PLEASE)

Answer on P. 130

Exclusively Yours...

YORK-HOOVER BODIES

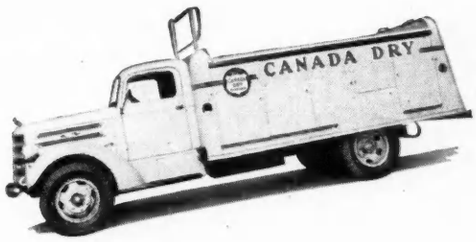
INDIVIDUALLY DESIGNED TO LOWER *Your* "PER-PACKAGE" DELIVERY COSTS



Check these Features!

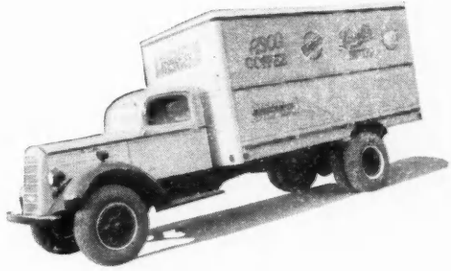
CONSTRUCTION . . .

Is predicated upon the job to be done. Heavy duty work requires one type, while bulk transportation of light weight products dictates another. However, regardless of the product to be carried, strength and stamina with a minimum body weight factor are carefully considered requisites.



ADAPTABILITY . . .

A close study of the product or products to be carried is necessary as well as the routes or distances involved. Very often combinations of specifically dimensioned product containers, designated for delivery on revised routes, create a cost saving that is definitely reflected in a lowering of the "per package" delivery cost.



EFFICIENCY . . .

Skillful engineering, experienced workmanship, a standardization of parts to effect quicker accident repairs, are a few of the factors contributing unusual efficiency; and we could add . . . plant facilities second to none in the industry.

BE *"Body-wise"* CONSULT US

YORK-HOOVER CORPORATION

BODY DIVISION **YORK, PENNSYLVANIA**

CCJ NEWSCAST

(CONTINUED FROM PAGE 128)

BOOKLET ON FLOOR REPAIR

A new floor and paving maintenance folder titled, "It's Easy to Repair Wet, Rutted Floors" has just been published by the Stonhard Co. This illustrated pamphlet outlines a simple method by which any handy man can quickly make permanent oil, grease and acid-resistant repairs to floors and driveways.

A free copy may be obtained by addressing the Stonhard Co., 403 N. Broad Street, Philadelphia 8, Pa.

CUMMINS CATALOG AVAILABLE

The Cummins Engine Co., Inc., Columbus, Ind., has brought out a new, pocket-sized, 64-page general catalog giving detailed descriptions of five series of Cummins Diesel engines—Series H, Series HS, Series NH, Series NHS and Series L.

ELECTRODE BOOKLET AVAILABLE

"Jessop Stainless Steel Welding Electrodes," an 8-page booklet just published by the Jessop Steel Co., Washington, Pa., contains complete information on the selection and application of Jessop stainless electrodes for welding stainless steel. Current range is furnished for each type of rod in varying diameters. Copies of this new booklet will be furnished upon request.

BRAKE CATALOG OFFERED

The manufacturers of Grey-Rock Brake Linings and Clutch Facings have just announced a new catalog covering these products for operators of trucks and buses.

Consisting of 52 pages and cover, it contains complete description of all Grey-Rock brake linings and clutch facings used in the truck and bus fields, as well as recommendations for practically all makes and models of buses and trucks.

TRAINEE HIRING NOT REQUIRED

Employers conducting on-the-job training programs under the G.I. Bill need not guarantee veterans jobs on completion of their training, Veterans Administration has announced in a new circular to its field offices.

The directive was published in answer to queries of employers who feared they could not maintain their job training programs because they would be forced to guarantee veterans jobs regardless of circumstances.

The circular explains that VA will continue to protect the interests of the veteran taking on-the-job training by preventing the employer from offering him such training when there is reason to believe that employment will not be available when the course has been completed.

The directive also states that VA will not interfere with existing practices of recognized on-the-job training establishments in which veterans are enrolled. This provision was included after some training institutions expressed the belief that VA training officers might exercise supervision over long established organizations that have had training courses for years.

In clarifying the functions of VA training officers, the statement explains that they will obtain information on veteran attendance and progress from recognized institutions only if the training establishments are unable to furnish regular reports. These reports, submitted by training institutions, contain data on student attendance and grades of veterans who are training under the G.I. Bill.

(TURN TO PAGE 134, PLEASE)

● WHAT'S COMING?

ANSWER . . . (To Question on P. 128)

Rocket brakes for emergency stops have been tested at the Allegheny Ballistics Laboratory, Cumberland, Md., on a Jeep. The rockets resulted in cutting the stopping distance in half. Such brakes, though, would be strictly on a one-time emergency proposition, for use in dire necessity only. Each refill of the rockets would cost $10 to $25.

(Another Cartoon Quiz is on P. 138)

MEANS EVERYTHING

A JOB WELL DONE very often reacts to the benefit of the doer. Such has been the case for Mansfield. To formulate and produce a practical substitute for natural rubber, The Mansfield Tire and Rubber Company was one of a selected small group that worked untiringly during the war years with the government. After long and arduous effort, this group actually developed tires which would out-perform the pre-war products of natural rubber.

Now, the benefits of this great achievement are passed on directly to you, in the form of tires whose longer wear, longer life and more complete satisfaction are a cause for enthusiastic comment wherever tires are bought. So, whether your experience lies with Mansfield, Richland, Century or United tires—all products of Mansfield—you know you are receiving the direct benefits that came as a result of knowledge which Mansfield gained in war cooperation with the U. S. Government.

Mansfield's jobbers are more than distributors of merchandise. They, also, are arbiters of quality... value... price. By independent choice and through deserved confidence of jobbers, dealers and users, tires made by Mansfield have earned their enviable reputation for service and dependability.

THE MANSFIELD TIRE & RUBBER CO. · MANSFIELD, OHIO

Following Well Known Tires

RICHLAND  UNITED 

WHOLESALERS EXCLUSIVELY

INTRODUCING . . . . .

. . . PAUL MERKERT, JR., and ROBERT MILLER, newly appointed to the sale engineering staff of the Cummins Engine Co., Inc., Columbus, Ind.

. . . W. P. RICE, as general sales manager of Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y.

. . . J. H. QUAM, as assistant general manager of Bendix Products Division of Bendix Aviation Corp., South Bend, Ind.

. . . FRANK M. HAWLEY, president and general manager of the Morse Chain Co., Ithaca, N. Y. and Detroit, Mich., and RAY P. JOHNSON, first vice-president and assistant general manager of the Morse company.

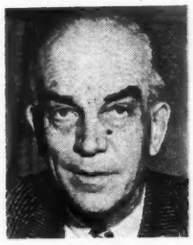
. . . DAVID M. KLAUSMEYER, who has been named president of Marmon - Herrington Co., Inc., Indianapolis, Ind.

. . . FRANK M. HAWLEY, who has been named president and general manager of Morse Chain Co. at Detroit and Ithaca. N. Y.

. . . M. F. SPERRY, newly appointed manager of the Philadelphia branch of the Trailmobile Co.

. . . GEORGE E. STOLL, recently appointed general manager of the Bendix Products Division of Bendix Aviation Corp.

. . . EDWIN T. SYVERTSEN, recently named general manager of the service division of Thompson Products, Inc.



. . . JOHN J. PALMER, as manager of the Newport News, Va., plant of Car Wood Industries, Inc.

(TURN TO PAGE 136, PLEASE)

INTRODUCING . . .

(CONTINUED FROM PAGE 134)

. . . RICHARD C. BAKER, an executive assistant of the Timken Roller Bearing Co., Canton, Ohio.

. . . N. J. DUBAK, recently appointed manager of the Long Island City, N. Y., branch of the Trailmobile Co.

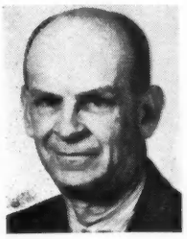
. . . THOMAS CAMP, who has become manager of the Dallas, Tex., branch of Federal-Mogul Service, Division of Federal-Mogul Corp., Detroit, Mich.

. . . J. J. GOLDIE, as director of administration of the General Tire & Rubber Co. H. L. MOLLENKOPF will become general office manager, and R. W. HENDERSON will become manager of branch offices.

. . . J. J. MULCAHY and REED GRIFFITH, newly appointed to the sales force of the General Tire & Rubber Co. Mr. Mulcahy is stationed in Akron, Ohio, and Mr. Griffith's first assignment is in Western Pennsylvania.

. . . W. A. LOVETT, who has been named New Orleans district manager for the Goodyear Tire & Rubber Co. L. W. C. DYE, who has been promoted to manager of the San Antonio district, and O. S. WHITAKER, who replaces Mr. Dye at Kansas City.

. . . ED V. ENGLE, newly appointed New England district manager for the Toledo Steel Products Co., Toledo, Ohio



. . . PARIS E. LETSINGER, who has been elected a director of the Cummins Engine Co., Inc.

. . . CLARENCE G. WOOD, who has recently joined the American Coach & Body Co., as manager of sales promotion.

. . . GAIL RUTLEDGE, new director of national accounts and coordinator of branch office activities for the General Detroit Corp. of Detroit, Mich.

. . . ROBERT SAFFORD, recently elected vice president of the Wayne Pump Co. of Ft. Wayne, Ind.

. . . BERT DINGLEY, who has recently retired as president of Marmon-Herrington Co.,

. . . CHARLES H. KANAVEL, as district manager of the B. F. Goodrich Co.'s automotive, aviation and government sales division, with headquarters in Los Angeles

(TURN TO PAGE 138, PLEASE)

FULL POWER
fast and smooth at ANY angle
...Vertical to Horizontal

Mister, this powerful jack does a "whale of a lot" more than lift. Blackhawk has an exclusive pump-on-side design that permits it to work at any angle, vertical to horizontal. That's why Blackhawk Jacks give such dependable and unmatched service on the road and in the shop. When you need jacks —buy the best—buy Blackhawks from your Blackhawk Jobber.

A Product of **BLACKHAWK MFG. CO.,** **Dept. J1186, Milwaukee 1, Wis.**

BLACKHAWK

INTRODUCING . . .

(CONTINUED FROM PAGE 136)

. . . ERNEST P. WECKESSER, who has been assigned a new territory in the Associated Lines Sales division of the B. F. Goodrich Co. The new area will consist of part of Ohio, West Virginia, Kentucky and part of Indiana. His headquarters will be in Akron. W. C. JAMES, who becomes representative for the company in the Chicago territory. O. B. VOLZ, who has been transferred to the southwestern territory of the company with headquarters in Atlanta, Ga. G. W. THOMPSON, succeeds Mr. Volz at Minneapolis.

. . . J. C. O'GORMAN, district manager of the new district office of the U. S. Tires Division of United States Rubber Co. B. H. BOWEN will succeed Mr. O'Gorman as manager of the U. S. Tires commercial merchandising department.

. . . J. C. BILLINGS, who has been appointed supervisor of tire distribution for the Replacement Tire Sales division of the B. F. Goodrich Co.

. . . JOHN J. REDDY, who has been appointed sales supervisor for the Rocky Mountain district of the Bowers Battery and Spark Plug Co., Reading, Pa. His headquarters will be in Denver. JOSEPH SPANGLER replaces Mr. Reddy in the Trenton territory.

MELVIN PAINTER, who has been appointed Baltimore branch manager. ROBERT O. BANKS, who becomes salesman for the Altoona, Pa., territory of the company. GEORGE F. STEPPER, who now represents Bowers in the New Bedford, Mass., territory.

. . . ELMER F. SCHUMACHER, newly appointed director of sales of the Du Pont Co.'s Ammonia Dept. DR. HARRY R. DITTMAR, as assistant director of the department. Mr. Schumacher succeeds DR. E. D. RIES, who recently became assistant general manager of the department.

. . . CALVIN R. MACBRIDE, who has been appointed assistant manager of the products division of Du Pont's Plastics Dept.

. . . GEORGE F. WILLIAMSON, who joins the spark plug division of Edison-Splitdorf Corp., West Orange, N. J., as sales representative in the states of Colorado, New Mexico, Wyoming, Utah and Nebraska.

. . . TOM O. DUGGAN, who has resigned his position of vice-president in charge of Thompson Products Service Division, to return to California.

. . . MART BATTENHOUSE, appointed to the sales staff of the Weaver Mfg. Co., Springfield, Ill., to cover the territory consisting of Southern Ohio, Southern West Virginia, Kentucky and part of Tennessee. A. G. MACBEAN, who will cover the Chicago metropolitan district for the company, and WILLIAM T. BARDOUSKI, who will represent the company in Wisconsin, Minnesota, North and South Dakota.

. . . ARTHUR F. BRANDT, as manager of the Flint, Mich., terminal of Geo. F. Alger Co. of Detroit.

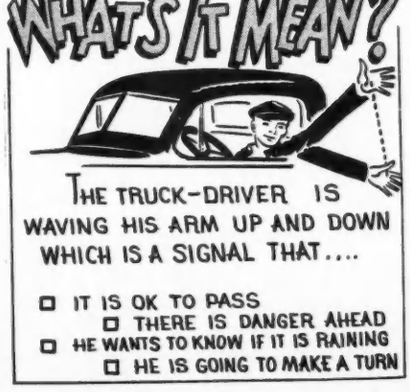
. . . JAMES MCMASTERS, as district manager of Great American Transport System, with headquarters in Chicago.

. . . T. W. MEYERS, who has been appointed division manager for the Chicago and Northern Illinois territory of the Aro Equipment Corp., Bryan, Ohio.

. . . E. G. HEFTER, as sales manager for the Automotive Division of the Morton Mfg. Co., Chicago, Ill.

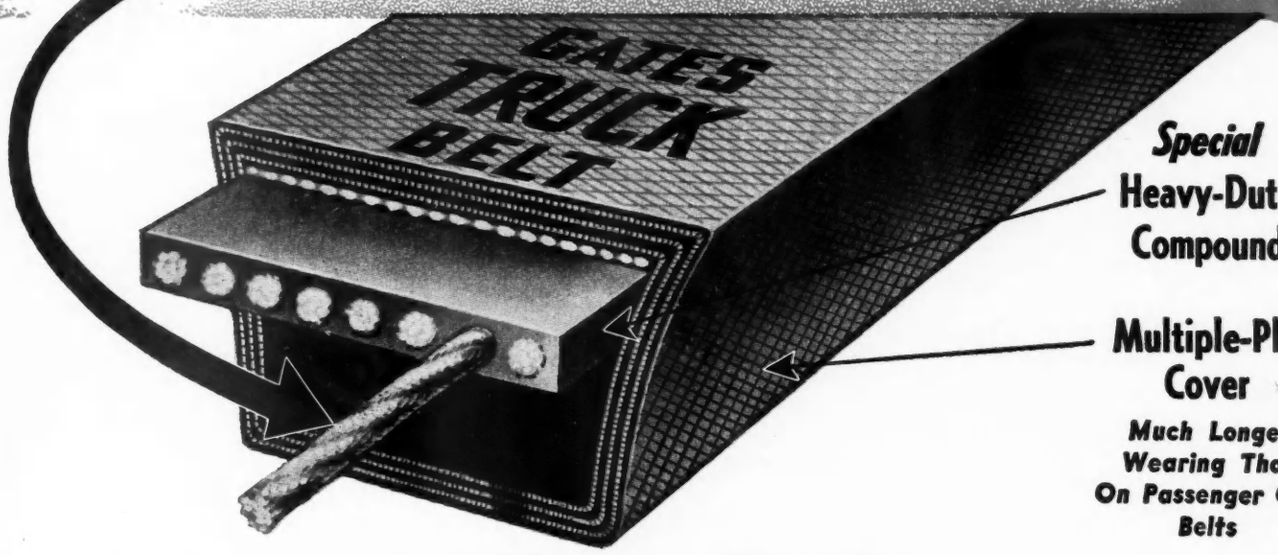
. . . WILLIAM J. SIMON, as safety coordinator of the National Highway Users Conference. His headquarters will be in Washington, D. C.

(TURN TO PAGE 200, PLEASE)



Answer on P. 142

RAYON CORDS



Special
Heavy-Duty Compound

Multiple-Ply Cover

Much Longer Wearing Than On Passenger Car Belts

Every Truck and Bus Operator KNOWS from EXPERIENCE

The Greatly *SUPERIOR SERVICE* Delivered by

TRUCK and BUS *TIRES* Built With

RAYON CORDS

You Get the Same Extra Advantages Now In
GATES TRUCK BELTS

YOU KNOW, of course, that there is no Truck or Bus Tire like a Rayon Cord Tire. Actually, Rayon Cord construction has proved to be absolutely essential to the building of TRUCK and BUS tires that have to carry so much heavier loads and take so much more strain than passenger car tires. It is because Truck BELTS also must carry heavier loads and need greater strength--exactly the same as truck tires -- that the Gates Specially Engineered TRUCK BELTS which you are now getting are built with the greatly superior Rayon Cord construction.

Make Sure
the Belt YOU get has this

T* **on the belt container**

Look for this letter "T" on the label of every belt you buy for Truck or Bus Service. "T" means that the belt has been specially engineered for TRUCKS and BUSES. You can be sure of getting the belt designed for this more demanding service. only by seeing to it that you are delivered belts which bear this letter "T."

*REG. U. S. PAT. OFFICE

***The* Gates Truck Belt**
is the *ONE* Belt that is

Specially Engineered
For TRUCKS and BUSES

FOUR FORMS . . .

(CONTINUED FROM PAGE 48)

taled and sent direct to the central accounting department. On the reverse side the pump meter reading at beginning and end of the week as well as "stick" readings and gallonage received during the week are also posted. Totals on front and back should balance, les an evaporation allowance of half of one per cent.

The Garage Shop Charge (Fig. 2) is a more unusual form. It is prepared at the end of each four-week accounting period by the central shop. On it is recorded all work performed on the vehicle, either by the various fleet garages (gas, oil, minor maintenance) or the central shop (lubrication and major overhauls). At the bottom will be noted a numerically coded box for quick tabulation of all major items including gas, oil, grease, repairs, service, batteries, tires, tubes, accident and total. Information on this form pertaining to gas, oil and grease is secured from the weekly report mentioned just above. The rest of the information is secured from individual Repair Orders (Fig. 4) written by the various shops.

Data furnished by these two forms, The Weekly Gas and Oil Report and the Garage Shop Charge, is punched onto tabulating cards and the complete information automatically computed and printed on the two sections of the Truck Cost and Performance Report, a separate sheet being used for each of the subsidiary fleet divisions. These reports are printed in duplicate for loose-leaf binding. One copy always remains in the central office, the other is furnished to the plant office concerned, together with operational statistics for the entire fleet, or in some cases statistics from other divisions, for comparative purposes.

The first part of the Truck Cost and Performance Report (Fig. 3) is in the nature of an itemized expense sheet, reflecting individual charges against each vehicle. The columns showing the various allocation of charges correspond to the information furinshed by the coded box at the bottom of the Garage Shop Charge (Fig. 2) plus fixed charges. The column headed "TOTAL" is the grand total, while the last two columns show a separate breakdown of labor and material costs only.

The second part of the Truck Cost and Performance Report (Fig. 3A) is a broader statistical report providing quick comparative figures between all units, and by using column totals (not shown), between the various branches. This form shows cost per mile, miles per gallon of gasoline, miles per quart of oil, miles driven during current and preceding period, etc. Total cost, appearing at the left

(TURN TO PAGE 144, PLEASE)

● WHAT'S IT MEAN?

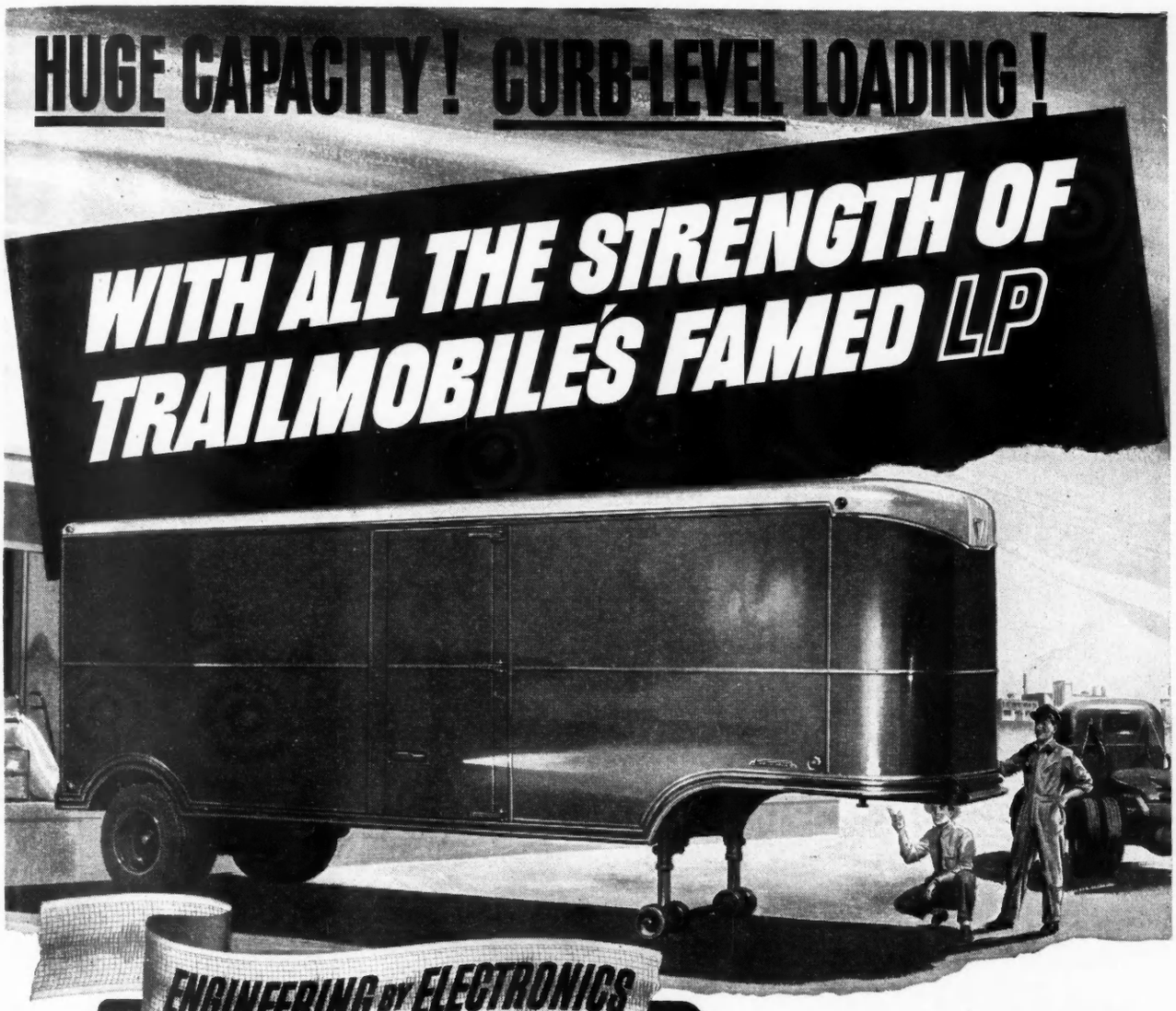
ANSWER . . . (To Question on P. 138)

An up-and-down motion of the arm is a signal that the road ahead is not clear and it is not safe to pass, or that there is some danger ahead.

(Another Cartoon Quiz is on P. 144)

HUGE CAPACITY! CURB-LEVEL LOADING!

WITH ALL THE STRENGTH OF TRAILMOBILE'S FAMED LP



ENGINEERING BY ELECTRONICS

NOW creates a "drop-frame" with RUGGEDNESS IDENTICAL TO THAT OF STRONGEST "STRAIGHT-FRAME" VANS

All the *extra* pay-load space, with floor at almost "street level," is now available *without* the weaknesses of former "similar" models.

No longer is the "drop-frame" merely a body placed up on a "cut-down" chassis. This newest, *much* bigger Trailmobile is engineered *as one prescribed unit!* So it maintains the character of all other Trailmobiles—each model made the strongest *possible* trailer of its type and weight—according to exclusive ELECTRONIC stress-measurement.*

The "rails" of this Trailmobile understructure are typical load-distributing beams, that "spread" load-concentrations throughout *many* bolsters! These rails are joined to those in front of the drop by a new-type bulkhead and special formed-plate construction, that permits the "drop" to be as firm and strong as though it were a section of a regular "straight-beam frame" itself."

Bolsters are *closely* spaced and of *unique* outrigger design, integrally "tongued" to the rails, thereby *preventing* "buckling," and gaining *all the strength of channel-shaped, solid members.* Thus they employ completely *all* the *extraordinary* load-carrying capacity of Trailmobile's standard sides.

These sides are of double-trusses in "diamond" arrangement, with big posts every 18 inches. The under-carriage is *also* Trailmobile's standard, *acknowledged* the "easiest pulling in the industry"—with *tubular* axles, our standard *free* springing, *truly* "horizontal" radius-rods *properly* rubber-bushed, and with all the oversize "parts" that increase resistance to side-play 25%.

So all in all, this model is *ideal* for *heavy-duty* hauling. It offers *specific* advantages to those with *heavy,* bulky freight, requiring low-level loading. See it at your nearby Trailmobile Branch. *Write. Get the *complete* story of Trailmobile's design and construction by *Electronic* stress-measurement.

THE TRAILMOBILE COMPANY
CINCINNATI 9, OHIO

TRAILMOBILE

Protecting its 105 Year Reputation

—71 "Homefolks" Service Centers

FOUR FORMS . . .

(CONTINUED FROM PAGE 142)

of this report, is derived from the "TOTAL" of the first report.

All ½-Ton Panels

WE ARE, of course, very fortunate in the fact that our fleet is as nearly standardized as possible using three well-known makes of standard ½-ton panel models. Thus with proper allowances for route variances, an important factor, the cost of operations between plants are directly comparable. By means of this accounting system, we have been able to instigate comparative effort between the various plants and, more importantly, to materially reduce costs in those plants, which were running excessively high.

Brass Tags Identify Vehicles

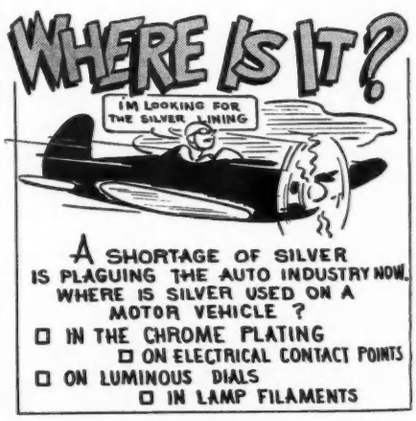
THE brass tag number, used on all our reports, is a uniform numerical numbering system for the entire fleet. Various trucks may still have printed on their sides a vehicle number pertaining to the particular plant with which it is connected. In most cases, individual fleet identity is retained. But all have the brass tag affixed in plain sight on the instrument panel. When new vehicles are purchased they come through the central shop for inspection and the tag with proper number is put on at that time.

Our check sheets for Preventive Maintenance Service is in our opinion both complete and convenient. PH is handled by each of the plant shops, and the time required thereby is entered on the Garage Shop Charge (Fig. 2) as "service." If additional work is required a Repair Order (Fig. 4) is prepared. Like most fleets who have good preventive maintenance, we attribute a very large part of our low operating costs to the successful execution of "preventing major maintenance before it is required."

As a double check on labor charges, we require each mechanic to complete a Daily Time Report (Fig. 5), accounting for his time both as to type of work performed and vehicles worked on. This form also provides a convenient way of totaling labor time (usually for spot checks only) to determine the amount of time spent on any given type of work. If, for instance, we should run into a series of radiator troubles on a particular make of vehicle, this item would show up quickly by totaling the labor time reports for any desired interval.

Our only stockroom is at the central garage where it is divided into

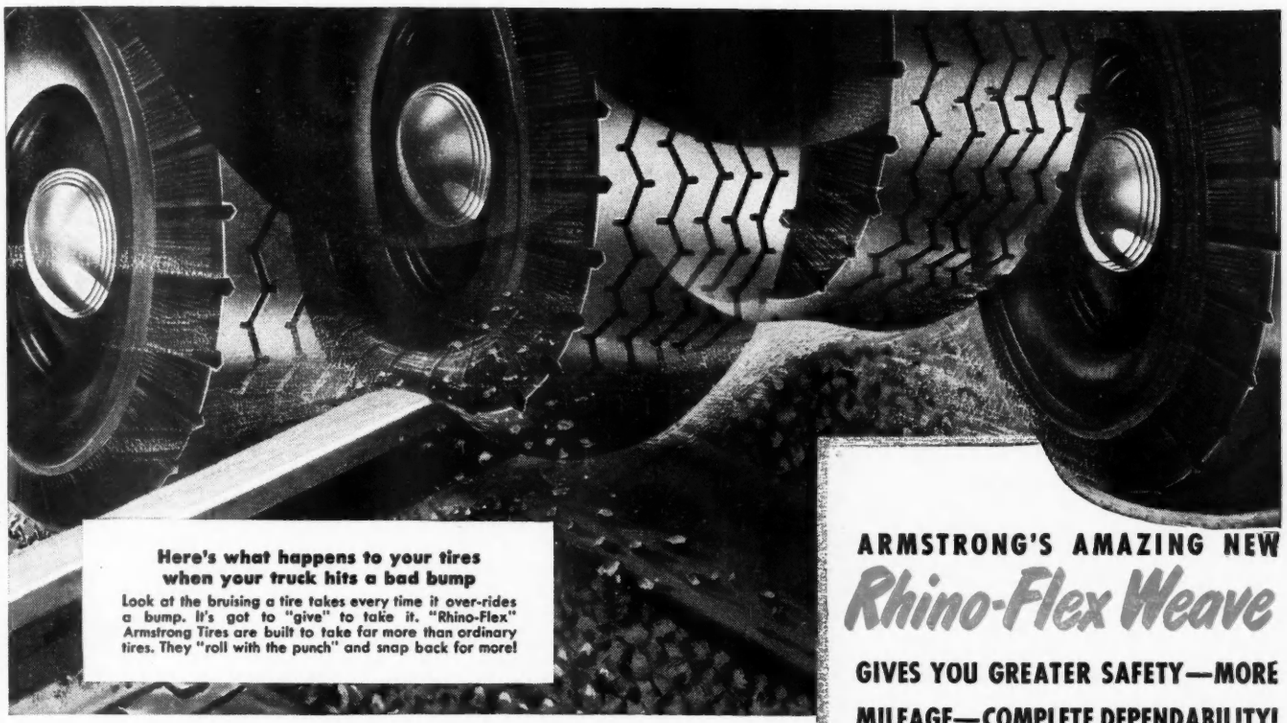
(TURN TO PAGE 146, PLEASE)



Answer on P. 146

WAR BORN TOUGHNESS

in Peace Time TRUCK TIRES



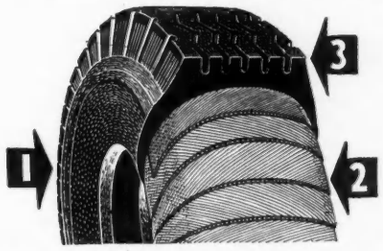
Here's what happens to your tires when your truck hits a bad bump

Look at the bruising a tire takes every time it over-rides a bump. It's got to "give" to take it. "Rhino-Flex" Armstrong Tires are built to take far more than ordinary tires. They "roll with the punch" and snap back for more!

ARMSTRONG'S AMAZING NEW

Rhino-Flex Weave

GIVES YOU GREATER SAFETY—MORE MILEAGE—COMPLETE DEPENDABILITY!



NEW TOUGHER CARCASS— a tighter, shorter fabric weave . . . impregnated with a premium blend of natural and synthetic rubbers to give the carcass far greater durability . . . wears longer . . . resists more shock!

NEW FLEXING FABRIC— with tighter, shorter rayon cord, and our special dipping and curing process. The flexibility is greater than we have ever before seen in a tire fabric . . . "gives" with the bump . . . snaps back safely!

NEW FLATTER TREAD— "Rhino-Flex" Weave enables us to build a flatter tread, which means far more rubber on the road . . . safer, surer stops—quicker starts!

Toughness and flexibility of tire casing determine the length of life of your truck tires.

Born of wartime necessity—plus years of tire-making know how—Armstrong's "Rhino-Flex" Weave gives you the *toughest* Armstrong truck tire ever made . . . plus vital, snap-back *flexibility.*

"Rhino-Flex" Armstrong truck tires now are available coast to coast. See this great new truck tire for yourself. Compare it with any other made today. Once you own Armstrongs, we know you will be convinced that "Rhino-Flex" Armstrongs are the safest, toughest truck tires ever made! See the Armstrong dealer nearest you!

Specialists in Quality Tires and Tubes since 1912
Plants: Natchez, Miss. • Des Moines, Iowa • Sales Offices: West Haven, Conn.
General Offices and Plant—400 Elm Street, West Haven 16, Conn.

ARMSTRONG TIRES

FOUR FORMS . . .

(CONTINUED FROM PAGE 144)

two parts, one for long time storage of bulk materials, the other for day-to-day service of all vehicles. Parts required by plant garages are requisitioned from the central parts room by bringing in the old part for salvage. To keep these records straight we have a Stock Room Daily Report (Fig. 6) which shows all material charged out to each vehicle, a Requisition to Purchasing Department for reorders (Fig. 7), and a Perpetual Inventory Card for each classification, showing quantity used and on hand, cost, freight charges, etc. (Fig. 9).

Our tire mileage record (Fig. 8 and 8A) follows conventional lines, a separate card being kept for each branded tire. Our own completely equipped retread shop has added materially in keeping tire costs and performance in line. They are all commercial 6.00 x 16, which is another advantage of our standardization policy. The tire records not only provide a case history of each tire in service but also give us invaluable data in selecting the best tires for our particular operation.

In closing, we believe the following breakdown of our average operating costs may be of interest to others for comparison with their own percentage figures, the aggregate cost being 100 per cent.

	Per Cent
*Fixed charges	27.13
Gasoline	40.08
Oil	1.63
Grease	.23
Repairs	16.46
Service	1.04
Batteries	1.11
Tires	10.97
Tubes	.91
Accident expense	.44
	100.00

* Includes depreciation, taxes, licenses, and insurance.

Even a quick look at these figures will show the spots where greatest emphasis should be placed. Fixed charges, gasoline, repairs and tires add up to 94.64 per cent of the total figure. They are all good targets for attack by the cost accountant and the necessary follow-up by fleet management. Of these the biggest and most profitable item for attack is obviously gasoline consumption. Conversely reduction of oil, grease, battery and such costs by the substitution of inferior grades is obviously false economy.

END

(Please resume your reading on P. 49)

BAKER NAMED DISTRIBUTOR

The American Coach & Body Company of Cleveland, Ohio, announces the appointment of the Baker Equipment Engineering Co. of Richmond, Va., as a sales and service outlet in the South.

● WHERE IS IT?

ANSWER . . . (To Question on P. 144)

Silver is used in the manufacture of electrical contact points. The shortage of silver has reduced deliveries of contact points to 10 per cent of the industrial demand.

(Another Cartoon Quiz is on P. 148)

WHAT'S THE LIMIT?

In the world's largest balloon, *Explorer II*, Capt. Albert W. Stevens reached an altitude of 72,395 feet, the highest man has ascended into the stratosphere. How high can man soar above the earth's surface? What's the limit?

IS *Porous Chrome** THE ENGINE-LIFE PISTON RING?

Frankly, we don't know! We *do* know that more than 7,000,000 miles of road tests prove that Porous Chrome multiplies ring life by four—even five! We *do* know that its fine honing action causes the entire set to seat within the first hour—eliminates the costly wear of the break-in period . . . *cuts cylinder wear in half!* Prove them for yourself—cut maintenance costs—call your American Hammered jobber *today!* Porous Chrome sets for bus and truck engines are ready now.

ANOTHER **American Hammered** RING LEADER

Chrome piston rings are an original American Hammered development

* Van der Horst process

Koppers Company, Inc., American Hammered Piston Ring Division, Baltimore, Maryland

American Hammered Piston Rings

A KOPPERS PRODUCT

MISTLETOE ASSAYS SAFE DRIVING

(CONTINUED FROM PAGE 65)

Mental Alertness Stressed

UNDER "Attention to Driving" they are cautioned that anything that takes their minds off driving or hands from the wheel is dangerous. Says the book, "Minor distractions often lead to major accidents. Gazing at someone on the sidewalk, reading billboards, peering off to the side for house numbers and admiring the scenery may take your eyes and mind off the road. Accustom yourself to *glancing* at such things, not *gazing* at them.

"Day dreaming is dangerous. Avoid thinking intently about home or business affairs, recreation, money matters and such things while you are driving. Such absent-mindedness make it difficult to focus attention upon proper driving and control of vehicle in case of emergency."

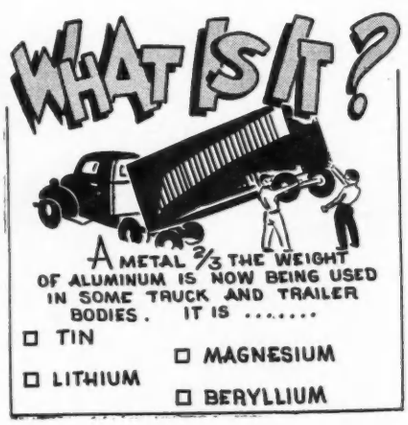
In advising the driver to be prepared for traffic emergencies, he is told: "The best way to stay out of a tight spot is not to get in one in the first place."

Drivers are told not to take out a vehicle which they consider unsafe or unfit for the road. They are also asked to make a brake test within half a block of the garage or shipping room and return to the garage if the brakes are not working properly.

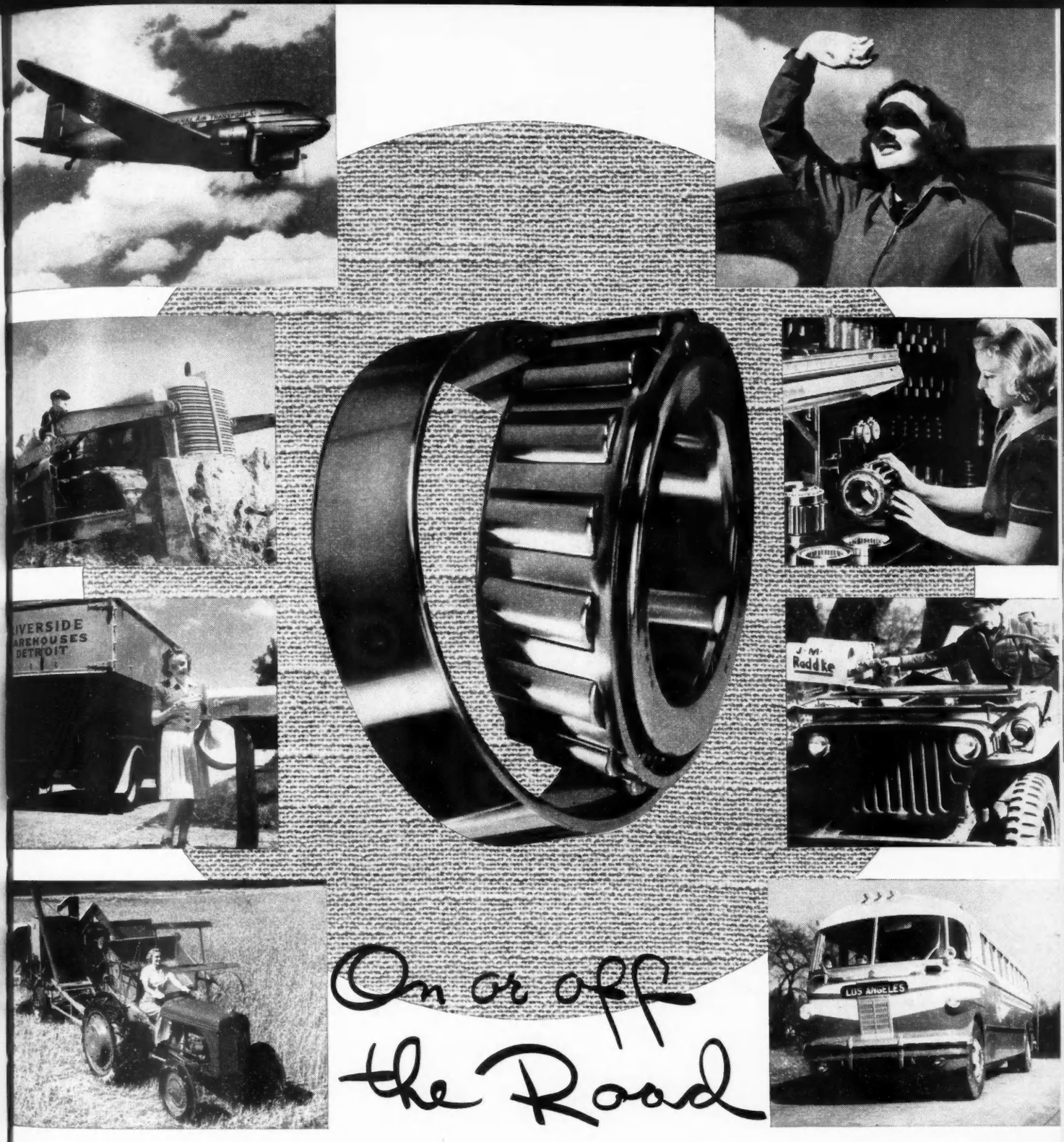
Safety First, Schedules Second

RULES and the maintenance of schedules are always in conflict in the average driver's mind. We try to make it strong enough to get it

(TURN TO PAGE 150, PLEASE)



Answer on P. 150



BOWER BEARINGS CARRY THE ROLLING LOAD

On the wide super-highways, along the back trails, in the fields, or in the air, transportation in every Country on the Globe rolls on Bower Roller Bearings.

Automobiles, trucks, tractors, bulldozers, farm machinery, buses, jeeps and every other kind of transportation vehicle perform the heaviest, most gruelling tasks with utmost dependability while Bower Bearings carry the rolling loads.

There is no finer quality, no smoother performance, no higher precision to be found anywhere in industry than in Bower Roller Bearings.

BOWER
ROLLER BEARING CO.
Detroit 11 Michigan

MISTLETOE ASSAYS SAFE DRIVING

(CONTINUED FROM PAGE 148)

over to the driver that safety does actually come first.

Here are some of the rules in regard to this: "A mainline driver leaving on the run late should not attempt to make up time driving. No one ever lost his job for not pulling a schedule.

"No pick-up driver has ever been discharged for missing a departing truck with a shipment.

"You cannot make any better time fighting traffic on a congested road than if you had stayed in the general flow of traffic."

Courtesy Promotes Safety

COURTESY is the first step in driving safely. It is doubly important to us because it is also the first step in selling our services to the public. The driver is the man who makes daily contact with our customers. He is the man who has our mark of approval and our equipment and is most often seen by the public.

Attitude Stressed

THAT is why we put so much stress on attitude, and attitude by inference, at least, includes character. Drivers with the right attitude for our business will almost always have the right character to go with it.

One reason we have been able to win three consecutive national safety awards is because the average length of service for over the road drivers is now seven and one-half years.

Now that the war is over and business is increasing at a rapid rate, we are faced with problems of adding to our fleet and increasing the number of our drivers. It is not only important but imperative that we do not hire drivers who will become a liability and whose presence will jeopardize our safety standing. To that end we have added new testing instruments and new tests to be sure those of the wrong type are eliminated at the outset.

Record Supports Practice

HERE are some figures which prove that safety and the courteous attitude of our drivers toward the public have a direct bearing on business volume and, consequently, on the earnings of our company and the wages paid employes.

In 1943 our winning safety figures showed five accidents in 2,851,000 miles, or an accident rate of .18 of one accident per 100,000 miles.

In 1944 there were six accidents in 2,932,000 miles, a rate of .20 per 100,000 miles.

In 1945 in the contest closed in June, we had five accidents in the higher mileage of 3,456,000 miles which brought our rate down to .14 per 100,000 miles.

It should be said that some of the accidents were nothing more than fender scrapes involving only a few

(TURN TO PAGE 152, PLEASE)

● WHAT IS IT?

ANSWER... (To Question on P. 148)

Magnesium, which is only 2/3 the weight of aluminum and ¼ the weight of iron.

(Another Cartoon Quiz is on P. 152)

Wagner CoMaX

IS A SUPERIOR BRAKE LINING

As the manufacturer of Lockheed hydraulic brakes, Wagner has been supplying brake materials for both original equipment and replacement needs for over 20 years—ever since the Lockheed hydraulic brake was first used. This vast amount of experience and accumulated knowledge of automotive brakes and brake materials is reflected in the superior quality of CoMaX brake lining.

Whether your particular needs call for sets, rolls, blocks, or slabs—for use on passenger cars, trucks, tractors, trailers, or buses—for whatever make or model—you can be sure that all Wagner CoMaX has the same uniform high quality with all of the characteristics listed at the right.

For complete information on Wagner CoMaX write to Wagner Electric Corporation, 6470 Plymouth Avenue, St. Louis 14, Mo.

CoMaX has these important characteristics which make it a superior lining

UNIFORM IN FRICTIONAL QUALITIES
As the lining wears the same type of brake lining surface is always exposed to the drums.

DOES NOT COMPRESS OR SWELL
No changes in lining thickness take place, other than that caused by normal wear. Brakes remain adjusted over long operating periods.

EASY ON DRUMS
Contains no abrasive material.

DOESN'T DETERIORATE WITH AGE
Whether in use, or on the shelf, CoMaX resists the elements.

IS QUIET
Grips silently, with no "howling" or "squealing"

PERMITS SMOOTH, CONTROLLABLE DECELERATION
No jerking stops. CoMaX responds to the degree of brake application.

Write today for Catalog BU-128, containing brake lining specifications on practically all models and makes of cars and trucks from 1936 through 1946.

1-946-6.

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID . . . NoRol . . . CoMaX BRAKE LINING

AIR BRAKES . . . TACHOGRAPHS . . . INDUSTRIAL BRAKES . . . ELECTRIC MOTORS . . . TRANSFORMERS

Wagner Electric

ATLANTA 3 • BALTIMORE 18 • BOSTON 15 • BUFFALO 8 • CHICAGO 16 • CINCINNATI 10 • CLEVELAND 15 • DALLAS 1
DENVER 3 • DETROIT 2 • INDIANAPOLIS 4 • KANSAS CITY 8 • LOS ANGELES 15 • MEMPHIS 3 • MILWAUKEE 2
MINNEAPOLIS 4 • NEW YORK 23 • OMAHA 2 • PHILADELPHIA 40 • PITTSBURGH 13 • PORTLAND 9 • ST LOUIS 3
SAN FRANCISCO 3 • SEATTLE 4 • TORONTO 2

MISTLETOE ASSAYS SAFE DRIVING

(CONTINUED FROM PAGE 150)

dollars and that none of them was serious.

Customers Surveyed

WE HAVE just completed a survey in which a neutral agency called on our customers all over the state with several questions. Our name was not mentioned, and the customer was only told that a trucking company wanted the information to be used in postwar expansion.

Among the questions asked were these three: 1. Of all the transportation companies serving you, which do you consider the most efficient?

Tabulation of the returns revealed that 51 per cent stated Mistletoe was most efficient. The nearest competitor got 15 per cent.

2. What transportation service now serving you do you consider the most dependable?

Returns gave us 54 per cent, with the nearest competitor receiving 12 per cent.

The answer to the question on courtesy brought us the most surprising return on our investment in courteous truck drivers with the right attitude.

3. What transportation service serving you has the most courteous drivers and most courteous overall personnel?

Here we received a rating of 51 per cent, with our nearest competitor receiving only 10 per cent.

These two sets of figures certainly prove the wisdom of our course, and they are gratifying results of a safety program and courtesy program that is 14 years old.

This program cannot be obtained by driving drivers or other employes. We get over to them that they can bring us their troubles and that they can have confidence in the management as we have confidence in them to perform their part of the bargain.

Mistletoe Always Goes Through

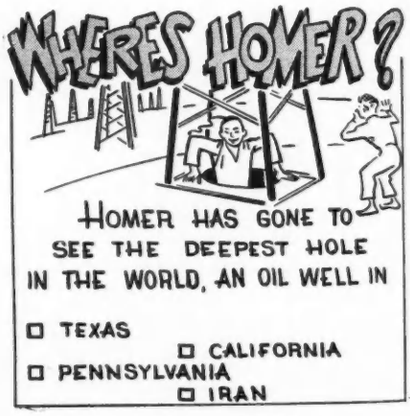
MISTLETOE is an express company transporting express cargoes at express prices. Our slogan is "Mistletoe Always Goes Through."

Our drivers take pride in keeping this slogan alive and in periods of bad weather when other traffic has stopped, they take pride in their skill and ability to take our trucks through —safely.

Drivers soon learn that Mistletoe cargoes often contain serums, vital medicines and that their arrival on time may be a matter of life and death.

Among unusual items of cargo is mother's milk which is collected in

(TURN TO PAGE 154, PLEASE)



Answer on P. 154

AC'S ASSURE UTMOST RELIABILITY

Today's AC Plugs

Stay Clean Longer

(a plus value of "Wider Heat Range per plug")

AC's superior ceramic insulators for commercial service plugs are the development out of which came the sensational AC Aircraft Spark Plugs which gave Allied bombers and fighters higher ceilings and longer plug life.

With these improved plugs, mileage between cleanings is greatly increased. Vehicles stay on the road longer. Plug costs go down. In addition, you get four other important advantages:

1. ***Plugs last longer***
2. ***Gas economy is better***
3. ***Power is better maintained***
4. ***Engine flexibility is better maintained***

AC

AC SPARK PLUG DIVISION
GENERAL MOTORS CORPORATION

SPARK PLUGS

★ ★ ★

MISTLETOE ASSAYS SAFE DRIVING

(CONTINUED FROM PAGE 152)

Oklahoma City for use when prescribed by physicians and which is shipped via Mistletoe to all parts of the state. On several occasions Mistletoe carried shipments of inoculation serum for rabies.

Drivers take pride in handling these important emergency shipments, and we try to see that they get every possible credit and that they know that the management is cognizant of the important place they occupy in our business.

Driver-Management Relations

HERE is an incident that illustrates the confidence of our drivers in our willingness to study their problem and together to arrive at a solution.

One driver on a new truck complained of eye-strain on the night run and said at times the road seemed to be "crawling toward" him. A check of his eyes in our clinic failed to reveal a clue to the condition. I went out on a night run with him. At times we thought we could locate the trouble, and by looking through the windshield and then looking at the road through the window, we both agreed that the trouble was very small and that it might be the lights. Accordingly we had the shop change the sealed beam lights, and we also had another driver try it. The lights didn't help, and the other driver said he couldn't be sure that anything was really wrong but was sure that there was extra eye-strain caused from something.

This was like chasing a will-o-wisp, but we continued. We next inquired of the dealer who sold us the truck if they had any record of defective windshield glass. He replied that they had never heard of it but that there must always be a first time and suggested that the windshield be replaced.

This was done. The new windshield cured the trouble. A subsequent report from the dealer disclosed that there was a flaw directly in line of vision that caused distortion.

First-Aid Training

BEFORE the war and partly during the war our drivers were trained in the use of first-aid. Each unit had been designated as a mobile first aid unit of the Red Cross. This training will be resumed. Each vehicle carries a 30-unit first aid kit, and drivers are instructed in its use.

Drivers will stop at the scene of an accident and render any assistance they can until the arrival of proper authorities. When their services or that of Mistletoe equipment is no longer needed, they are instructed to make a written report and proceed to cover the trip.

END

(Please resume your reading on P. 66)

● WHERE'S HOMER?

ANSWER . . . (To Question on P. 152)

Texas. In Pecos County there is an oil well reaching 15,279 ft., almost three miles.

(Another Cartoon Quiz is on P. 157)

NEW PRODUCTS

(CONTINUED FROM PAGE 61)

No special tools are needed for installation, according to the manufacturer. A set of shackles can practically be installed while truck or trailer is being loaded. The old worn shackles are removed and the Ace shackles are quickly inserted without replacing the old bushings or eyes.

The tapered pins and split bushings permit a wide range of adjustment. With a little attention and an occasional shot of grease these shackles are said to give long service.

Use Free Postcard For More Details.

P370. Dry Powder Lubricant

An entirely new air-floated dry powder lubricant that does an efficient lubrication job is announced by the Schmidgall Mfg. Co., Peoria, Ill.

The new product is called "Grafize." It is compounded by long laboratory processes, and is applied by a bellows type carton in which it is packed and sealed at the factory.

"Grafize" is said to be finer than the finest face powder. It thoroughly covers and effects positive lubrication on every part to which it is applied, according to the manufacturer.

Its light grey color and the fact that it will not soil hands or clothing makes it outstanding over black graphite, for lubricating purposes, the company states.

Use Free Postcard For More Details.

P371. Engine Cleaner

Si-en-tif-ik Motor Reconditioner is a new product designed to remove sludge, carbon and varnish deposits quickly from gasoline and diesel engines. The manufacturer's laboratory found two distinct types of carbon compounds deposited in the upper cylinder area of an engine in normal operation. One of these is deposited by low temperature and the other by high temperature burning material, and each is formed in a separate stage of the motor cycle.

The extreme variation in pressure and temperature during one complete cycle causes these damaging by-products to be of such different natures that a solvent adequate to remove one may have no effect on the other.

Si-en-tif-ik Motor Reconditioner manufactured by Si-en-tif-ik Products Co., Inc., Chicago, Ill., is said to solve this problem by actually removing all types of harmful deposits, freeing valves, rings and oil lines. It is said to have no harmful effect on any metallic or nonmetallic part of the engine and actually assists lubrication.

Use Free Postcard For More Details.

P372. Power Axle Shift

Physical driving aid to operators of heavy trucks equipped with two-speed axles is now available in the form of a small vacuum chamber which does the work of shifting the axle gears from low to high, or high to low, in conjunction with any regular transmission gear with a flick of the finger, according to Bendix Products Division, Bendix Aviation Corp., South Bend, Ind.

The conventional installation consists of a single or double line control vacuum power unit mounted on the rear axle housing, with its operating rod connected to the high-low axle shift mechanism. This power cylinder is of ample size for an instantaneous response which makes the

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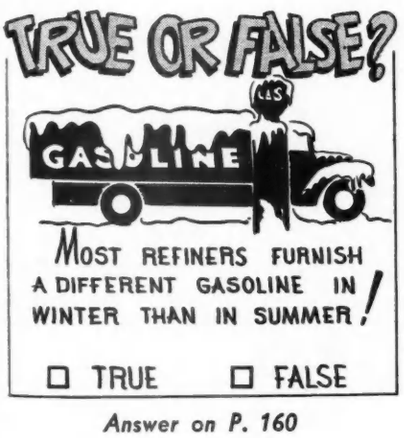


Answer on P. 160

NEW PRODUCTS

(CONTINUED FROM PAGE 157)

gear change action fast and accurate.

The vacuum line or lines are connected to the Pre-selector control valve with its "high-low" gear selector lever, and a line to the vacuum source such as the engine manifold or vacuum pump. There are no complicated external parts to loosen, rattle, require frequent lubrication, or get out of adjustment; and the entire installation is constructed for heavy duty service.

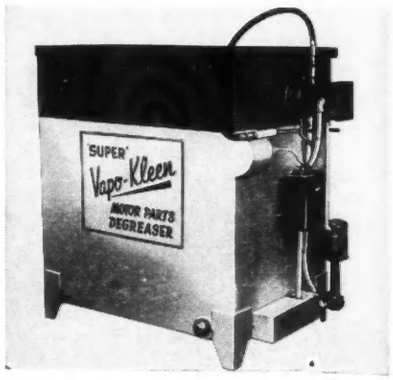
Use Free Postcard For More Details.

P373. Vapor Degreasers

The Phillips Mfg. Co., Chicago, has developed two new vapor degreasers—the "Duo" and the "Super" Vapo-Kleen—both of which are specially engineered to meet the needs of the automotive and aviation industries.

These new degreasers are said to offer safe operation through the use of Phillsolv, a 100 per cent non-inflammable cleaning solution which eliminates hazardous gasoline wash. Cleaning and drying oily, greasy parts can be done in from 1 to 5 min. depending on the degree of soil to be removed from the parts.

The "Duo," designed to handle parts up



to 12 in. in diameter, is offered complete with the pre-dip tank, electrically heated vapor tank, controls and thermostat totally enclosed in an enameled metal cabinet with cover. It cleans by dip, soak or vapor, or any combination of these.

The heavy duty "Super," designed to handle complete engines, offers an added feature of a pressure spray hose for flushing stubborn grease and oil deposits. It reclaims its own dirty solvent automatically, by distillation.

Use Free Postcard For More Details.

P374. Resistance Tester

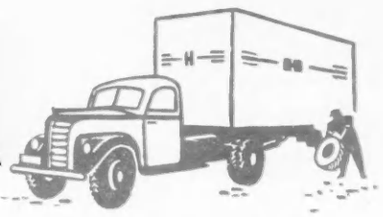
A new instrument for checking insulation resistance in a.c. and d.c. equipment is announced by Ideal Industries, Inc., Sycamore, Ill.

Entirely self-contained, the tester is ready for instant use anywhere. There are

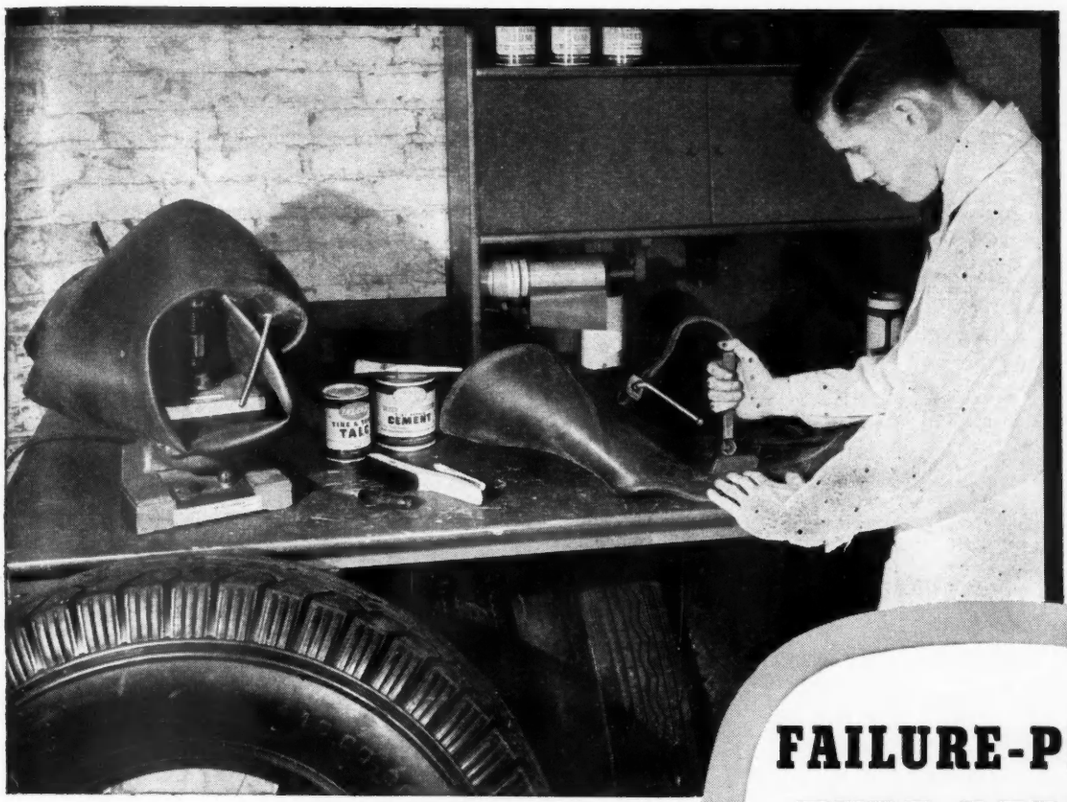
(TURN TO PAGE 160, PLEASE)

Illustrated in the architect's drawing above is the plant of the Lincoln Engineering Co., St. Louis, with its new addition now under construction. This addition, which is the third in ten years, adds 20 per cent to the floor space and provides for enlarged Engineering and Production facilities. Completion by midsummer will give relief to the company's expanded demand for Lubricating Equipment and allied products

FLATS DELAYING YOUR SHIPMENTS?



"On Time" delivery is demanded today for every shipment.
There's no time on your schedules for fixing flats.



FAILURE-PROOF TUBE REPAIRS

in 15 to 18 minutes on LARGE BREAKS

Make tube repairs in your own shop that are failure-proof —that stand up under long, hard driving conditions. The New Inland Tube Vulcanizing Unit does a thoroughly safe and dependable job of tube repairs—fast and economically. Large breaks repaired in 15 to 18 minutes. Handles injuries up to six inches long in one curing, in both natural and synthetic rubber tubes, plus all sizes of valve stem repairs and replacements.

This new Unit consists of Inland's famous thermostatically controlled vulcanizing press PLUS a complete stock of gum, vulcanizing cement, accessories and tools. It's a complete tube repair shop in one unit. Easy to use; no experience necessary. Your automotive jobber has these Units in stock for immediate delivery.

Inland Rubber Corporation. A subsidiary of Minnesota Mining and Manufacturing Company.

BE SAFE . . .
USE INLAND

Inland Rubber Corporation
33 So. Clark St., Dept. C58
Chicago 3, Ill.

INLAND

Please send me complete information concerning the Inland Tube Vulcanizing Unit.

Name.....

Address.....

Town.....

NEW PRODUCTS

(CONTINUED FROM PAGE 158)

no batteries or external power supplies, no brushes or commutators to require attention. The necessary power is provided by a small internal hand generator which is operated by a slowly turning crank.

Correct testing voltage is indicated by two small button lights that glow at 500 volts d.c. Test range is 0-100 Megohms. Dimensions, 3⅜ in. wide x 6 in. long x 3¼ in. high; weight with leather carrying case is 3½ lb.

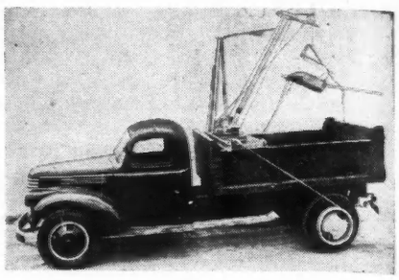
Use Free Postcard For More Details.

P375. Truck Loading Device

A new development in truck loading devices is the Cascade Scrape-Loader recently announced by its maker, the Cascade Mfg. Co. of Portland, Ore.

The Scrape-Loader is a maintenance tool requiring no power plant or power take-off from the truck engine. One man operates the 1/6-cu. yd. scraper in the ditch, the driver remains in the truck.

The Scrape-Loader is adaptable to any standard dump truck and is in conformity with legal height and width limits of the several states. In operation, the boom, pivoted at its base, swings out over the ditch. The scraper is pulled along the



ditch while truck travels forward by means of a cable attached to a drawbar which projects out from the truck below the boom. This drawbar is hinged to drop down out of the way when not in use.

The hoisting device is a winding drum attached to rear wheel of truck which, by simply backing the truck, supplies the power for raising scraper from the ditch and swinging it up over truck body. The torque strain on truck axle in hoisting scraper load is but a small fraction of the torque required to drive the truck.

After scraper has been filled, the truck stops and backs up. A ratchet in the winding drum engages and the drum winds in the line, quickly hoisting loaded scraper up and over truck. By means of a trip-line, the scraper operator guides the bucket to desired unloading position and then trips the load. The truck then travels forward and scraper is returned to the ditch.

Use Free Postcard For More Details.

P376. Exhaust Rust Remover

A new product, "Super-Kwick," developed and sold by the Walker Mfg. Co. of Wisconsin, is a fast "rust-buster" designed to speed up the removal of rusty, corroded exhaust systems.

"Super-Kwick" is said to be simple to use. Starting at the rear end of the system, the solution is applied liberally to all nuts, bolts, hangers, clamps, brackets—and to both front and rear muffler and pipe connections. Then starting again at the rear, all necessary hangers, brackets and rear muffler clamp are removed, thus freeing the tail pipe. Muffler and pipe connections are given a second shot of "Super-Kwick." Then with up-and-down and sidewise-and-outward movements, the pipe is worked free of the muffler. The muffler is removed from the exhaust pipe in the same manner.

Use Free Postcard For More Details.

(TURN TO PAGE 162, PLEASE)

● TRUE OR FALSE?

ANSWER . . .(To Question on P. 157)

True. Refiners generally increase the volatility of the gasoline they market in winter months by adding additional quantities of natural gasoline. Too volatile a fuel in warm weather would have a tendency to vaporize in the system and cause vapor lock.

START THIS 90-DAY Road Test Today

Money back if FRAM FILCRON Oil Filters don't save you breakdowns, overhauls, repairs!

TAILOR-MADE PACKAGES FOR POPULAR TRUCKS have specially designed welded brackets and are packed complete with all lines and fittings, ready to install. Model illustrated for all V8-85-90-95-100 Ford trucks.

Here's the 90-day road test that has shown hundreds of fleet owners how to save big money! Put Fram Filcron oil filters on your trucks or buses. Run for 90 days—*and keep a record.* Unless *you* are fully convinced that Fram Filcron oil filters actually save you many times their initial cost, your money will be cheerfully refunded!

Fram can make this offer because Fram Filcron filters actually trap abrasive particles as small as *one micron*—.000039 of an inch in size! Filcron filters keep oil physically, visually clean* . . . prevent formation of sludge . . . cut down engine wear, overhauls, breakdowns, repair bills!

If your fleet is already filter-equipped, install genuine Fram replacement cartridges to step up performance. Call your Fram distributor today! Fram Corporation, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto, Ontario.

**Certain heavy-duty oils, due to the detergent additive used, will turn dark in color almost as soon as put into the engine. Where such oils are used, filter cartridges must be changed on a mileage basis.*

FRAM Filcron Filter

THE MODERN OIL & MOTOR CLEANER

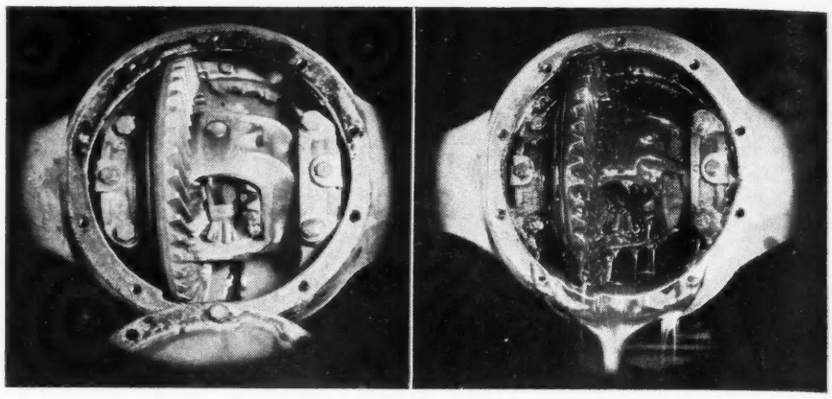
NEW PRODUCTS

(CONTINUED FROM PAGE 160)

P377. Speedy Cleaning Process

Featuring speed, cleanliness and safety, the Circo Dee Tee cleaning method for degreasing transmissions and differentials is claimed to be capable of removing 20 per cent more grease from the unit.

The Dee Tee process, developed by Circo Products Co., Cleveland, Ohio, makes use of a non-inflammable, non-explosive liquid solvent. This solvent is heated and converted into vapor which expands and flows into the differential or transmission.



The solvent effect of the hot vapor causes it to penetrate through the lubricant and condense back into liquid form on the colder metals. This action dilutes the old lubricant and gummy deposits, rinsing them from the inside surfaces and washing down the dirt and metal particles. Since the temperature of the hot vapor is higher than the boiling point of water, the process leaves the surface dry and free from moisture.

The Circo Cleaner is simple in operation. An electric heater is immersed directly in the solvent when the can is screwed in place on the unit. At the end of the cleaning operation, a control device automatically shuts off the heater and signal light.

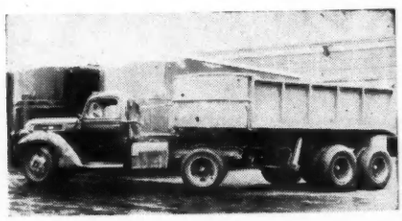
The unit is put in operation by attaching it to the assembly to be cleaned, using a threaded adapter plug supplied with the unit. A can of Dee Tee Solvent is screwed into the assembly, and after plugging in the electric cord and pushing the start button, the operator is free to continue with other work.

Use Free Postcard For More Details.

P378. Liquid Gasket Cement

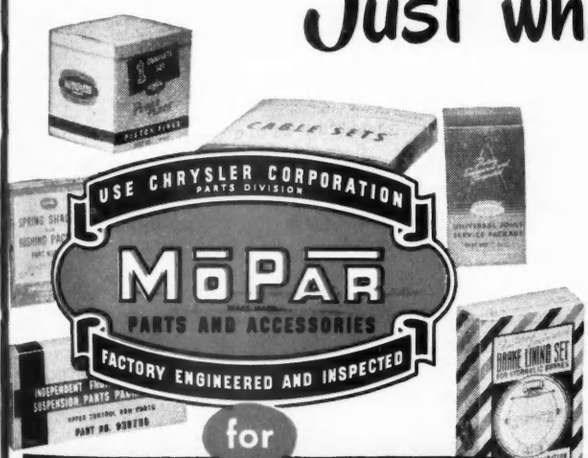
Gaska-Seal No. 3 is the new brush-on liquid gasket material developed by the Puritan Co., Inc. of Rochester, N. Y. This solution is said to form a permanent, non-drying, elastic seal that is unaffected by temperatures as low as 75 deg. below zero and as high as 500 deg. above zero.

(TURN TO PAGE 164, PLEASE)



Announcement of a new Dump Trailer, with 19-cu. yd. capacity, is made by the Fruehauf Trailer Co., Detroit. The new trailer is especially designed for coal delivery, but can be used equally well for hauling sand, gravel and other materials. Body dimensions are 18 ft. x 7 ft. 5 in. x 47½ in. Also available are models with 8 1/3 and 15½ cu. yd. capacity

Just what the Doctor ordered!



A garageman will also find "just what the doctor ordered" when he uses *MoPar* Service Packages.

He'll have the exact parts needed for specific service jobs. *MoPar* Parts are factory engineered and inspected. That's why they fit right and give top performance. For customer satisfaction, use these and other *MoPar* Service Packages:

PISTON RING • BRAKE LINING • BRAKE CYLINDER AND PISTON • GASKET • FRONT WHEEL SUSPENSION • TIE ROD AND DRAG LINK • WATER PUMP • UNIVERSAL JOINT • IGNITION CABLE • KING PIN

NOTE TO ALL REPAIR SHOPS

If you need service packages or individual parts for a Plymouth, Dodge, De Soto, or Chrysler, obtain them from a dealer for these vehicles.

Plymouth
DODGE
DeSoto
CHRYSLER
DODGE Job-Rated TRUCKS

CHRYSLER CORPORATION — PARTS DIVISION
DETROIT 31, MICHIGAN

NEW PRODUCTS

(CONTINUED FROM PAGE 162)

It can be used on all types of gaskets from metal-faced to natural rubber and may be used alone where close tolerances have to be maintained. While highly adhesive, it is non-seizing and so forms a leak-proof, long-lasting seal or joint, but disassembly can be easily effected.

Gaska-Seal No. 3 was developed primarily for automotive work and is unaffected by gasoline, oil, anti-freeze, steam, salt water, or other liquids encountered in automotive work. Gaska-Seal No. 3 is supplied in brush-attached ¼ pint and pint sizes and also in gallon size cans.

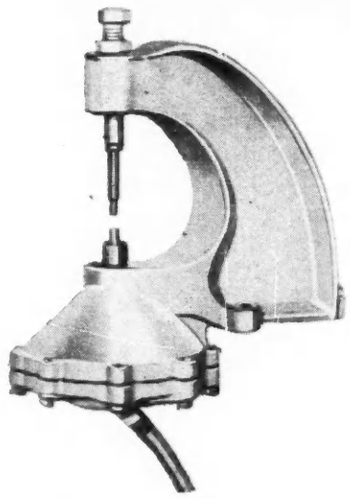
Use Free Postcard For More Details.

P379. Air-Operated Riveter

An air-operated, low-priced riveting machine has recently been placed on the market by Power Brake Parts Mfg. Co., Detroit, Mich.

The machine is so designed that it can be attached to any work bench, taking up only 4½ in. x 5½ in. of bench space. It stands 12 in. high and weighs 32 lb.

It is claimed that this new type riveting machine is easier to operate, because



its metering-type treadle valve gives the operator complete control over the pressure, making it possible to locate the rivet correctly under the crimping punch before applying full pressure. It is said to minimize spoilage of rivets and eliminates the danger of punches being broken by striking the steel brake shoe.

Use Free Postcard For More Details.

P380. Block Cleaning Tanks

Two new models of engine block cleaning tanks specifically designed for the degreasing of larger blocks have just been released by Aeroil Products Co., West New York, N. J.

Both models are used in connection with the Hot Dip Alkali cleaning process. The units are fully insulated and heated from the inside by means of a patented removable immersion tube system with the burner in a burner "well" within the fully insulated tank. Because of this factor, the manufacturer claims savings with this equipment of as much as 30 per cent in time, labor and fuel.

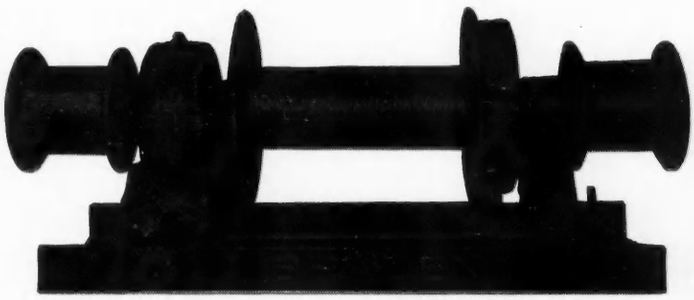
Standard equipment includes built-in dial thermometer, heavy duty removable grilles, scum gutter, sludge drain, draw-off cock,

(TURN TO PAGE 166, PLEASE)

Stanton A. Hayes, right, manager of International Harvester Co.'s Minneapolis truck branch and recently discharged lieutenant colonel, U. S. Army received the Legion of Merit citation from Col. L. H. Stanford, Evanston, Ill., left, at a dinner held in Chicago recently

A GRIP OF STEEL *for Safety...*

Like a grip of steel the NEW BRADEN OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE keeps suspended loads under perfect control at all times. Braden developed this SAFE Oil Cooled Automatic Brake with positive action. It is standard equipment on all M Series Braden Winches with capacities of 12,000 to 100,000 pounds. It is fully adjustable and automatic and will give years of trouble-free service.



The New Model M12-18B

Safe working Load 25,000 lbs. Recommended for use on 1½, 2, and 2½ ton trucks. It has as standard equipment, the NEW Oil Cooled, Fully Adjustable, Automatic Safety Brake.

THE BRADEN OIL COOLED FULLY ADJUSTABLE AUTOMATIC SAFETY BRAKE

BUY BRADEN - They are Safer

BRADEN WINCH COMPANY
1001 East Admiral Boulevard

BRADEN *Winches*

TULSA 3,
Oklahoma

NEW PRODUCTS

(CONTINUED FROM PAGE 164)

and double braced hinged covers. Provision is also made for automatic heat controls for thermostatic temperature regulation from 100 deg. to 550 deg. F.

The new Model 25T features a normal dipping capacity of 270 gal. with a dipping space 54 in. long x 38 in. wide x 30 in. deep. The inner shell of this tank is manufactured of 14 gage steel.

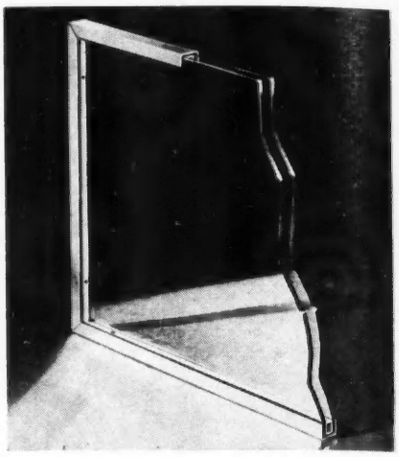
The new Model 34T features a dipping space of 60 in. long x 38 in. wide x 36 in. deep with a normal dipping capacity of 355 gal. This unit is manufactured of 12 gage steel.

Use Free Postcard For More Details.

P381. Insulated Window

Development of a new type, efficient double-glazed window insulating unit known as Twindow for industrial, home, commercial, and special use has been announced by the Pittsburgh Plate Glass Co.

Twindows are integral insulating units of two or more plates of glass enclosing a quarter-inch or half-inch hermetically sealed air space. One of the revolutionary features of Twindow is use of hollow aluminum tubing to separate and hold the



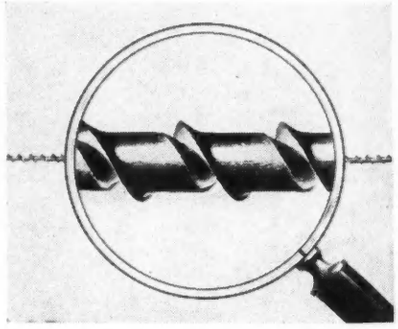
glass plates in position. The entire unit is framed with a light-gage stainless steel channel (.015 to .020) with the channel legs extending three-eighths of an inch inward on the surface of the glass from the base around its periphery to give maximum protection during installation and use.

Constituting one of the most efficient thermal and dust insulation units yet developed, the Twindow unit virtually prevents condensation, one of the most difficult transparent fenestration problems to solve in all types of applications. This naturally permits use of larger windows in offices, stores, and homes and at the same time appreciably reduces heating and air-conditioning costs.

Use Free Postcard For More Details.

P382. Spiral Cut Saw Blade

A simple principle of cutting spiral running teeth the full length of the blade body is employed by Tyler Mfg. Co., Santa Monica, Cal., in producing radically new "Allways" saw blades for hand coping saws or power operated jig saws.



The new "Allways" blade cuts in any direction without requiring the operator to turn his saw frame or his work to change the direction of cut.

Made out of oil tempered spring steel and designed to cut all woods, light metals and plastics, the new blades are said to outperform and outwear conventional blades. They may be tied in knots without breaking or being damaged. The peculiar spiral cut teeth make for safer instruments to use.

Use Free Postcard For More Details.

(TURN TO PAGE 168, PLEASE)

BONNEY "Case-Toughened" SOCKETS

Sockets are the most used tools in a mechanic's kit because when used with various types of handles and attachments, they can do almost any nut-turning job. But inferior sockets are little better than nothing.

Sockets to be good must have just the right combination of hardness and toughness to provide longest wear and greatest strength. Bonney "Case-Toughened" Sockets provide just the right combination—hard enough to resist wear yet tough enough to resist breakage.

If you have not tried Bonney Sockets, stop in at your nearby Bonney Jobber and ask him to show you these long wearing Sockets that are the first choice of many mechanics.

BONNEY TOOLS

BONNEY FORGE & TOOL WORKS • 635 N. MEADOW ST. • ALLENTOWN, PA.

In Canada: Gray-Bonney Tool Company, Ltd., St. Clarens & Royce Aves., Toronto

NEW PRODUCTS

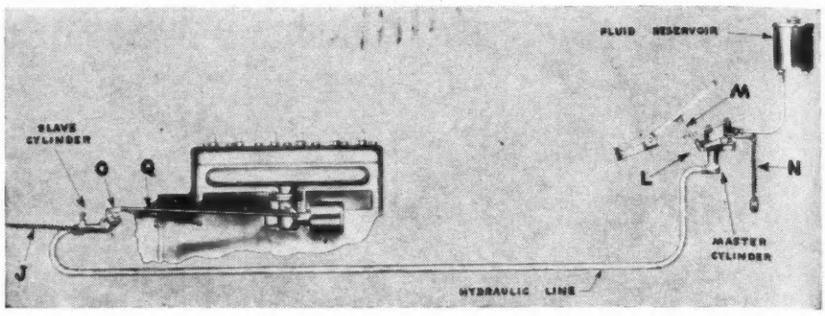
(CONTINUED FROM PAGE 166)

P383. Replacement Thermostats

The Gabriel Co., Cleveland, Ohio, announces the newest addition to its growing list of products.

A complete line of motor and heater replacement thermostats manufactured and assembled by the latest, most improved methods, has been introduced to Gabriel jobbers and dealers.

Use Free Postcard For More Details.



A safe and dependable hydraulic system of operating throttle and clutch on vehicles with the engine mounted in the rear has been engineered and is now manufactured by the Bendix Products Division, Bendix Aviation Corp., South Bend, Ind. At the present time, equipment for rear engine mounted buses is in production, and special consideration is being given to installations for the proposed "Tilt Cab" under floor engine truck designs. Use of the Bendix controls is said to eliminate complicated mechanical mechanisms

P384. Universal Gear Lubricant

Development of a new Universal gear lubricant, which provides increased protection for heavily loaded hypoid gears, is announced by The Texas Co. The new lubricant is designed to protect gears subjected to the high-torque, low-speed conditions encountered on mountainous terrain and to withstand high-speed shock loading.

Composed of a specially compounded soap with sulphur, chlorine, phosphorus and additives, Texaco Universal is a balanced mixture of highly active anti-weld agent and a less reactive film-strength or surface-active agent, the manufacturer states. The product is said to have high stability, is non-foaming, non-channelling and non-corrosive when subjected to water. It does not rust metal or cause the formation of sludge and gummy deposits. The new lubricant provides maximum protection for heavily loaded hypoid gears subject to high tooth pressures and the sliding and shearing action of gear teeth.

Use Free Postcard For More Details.

(TURN TO PAGE 170, PLEASE)

The new Fruehauf Factory Branch at 1730 No. Delaware Ave., Philadelphia, is completely modern, of brick and steel fireproof construction with automatic sprinklers, and contains approximately 43,000 sq. ft. of floor space. It occupies a 4½-acre tract of land, fully enclosed, with storage space for 189 trailers in addition to a large public parking area. Service facilities of the branch are more than doubled, with floor space provided for working on 27 trailers simultaneously, and with adequate aisle space for ease of entrance and exit

A unique method of volume delivery for volume production—6 airplanes in one truck! The six Cessna 140's lined up behind the truck are representative of the same number of planes which have already been neatly packed in the truck. To supplement its flyway schedule, the Cessna Aircraft Co. of Kan., is now delivering a portion of its volume production by this unusual method

NEW PRODUCTS

(CONTINUED FROM PAGE 168)

P385. Seat Covering Material

A new stainless seat covering material known as Lumite has been announced by the Chicopee Mfg. Co. of New York.

Lumite seat covers utilize a fabric woven from extruded filaments of Saran, a plastic product of the Dow Chemical Co. Available in a wide range of solid colors or designs such as the standard plaid of other seat-cover materials, this fabric is described as having high wearing qualities. All the colors are entirely resistant to sunlight, wear or other factors which cause colors to fade in other seat-cover materials.

In addition, dust, dirt and grease or oil stains are easily removed with soap and water or with simply a damp cloth, without leaving a stain or spot.

Use Free Postcard For More Details.

P386. Soldering Gun

To facilitate automotive service and repair work, the Weller Manufacturing Co. of Easton, Pa., has developed a new transformer type electric soldering gun which comes to soldering temperature in five seconds. Known as the "Speed Iron," the new tool is said to offer the advantages of speed, safety, convenience, and low cost maintenance.

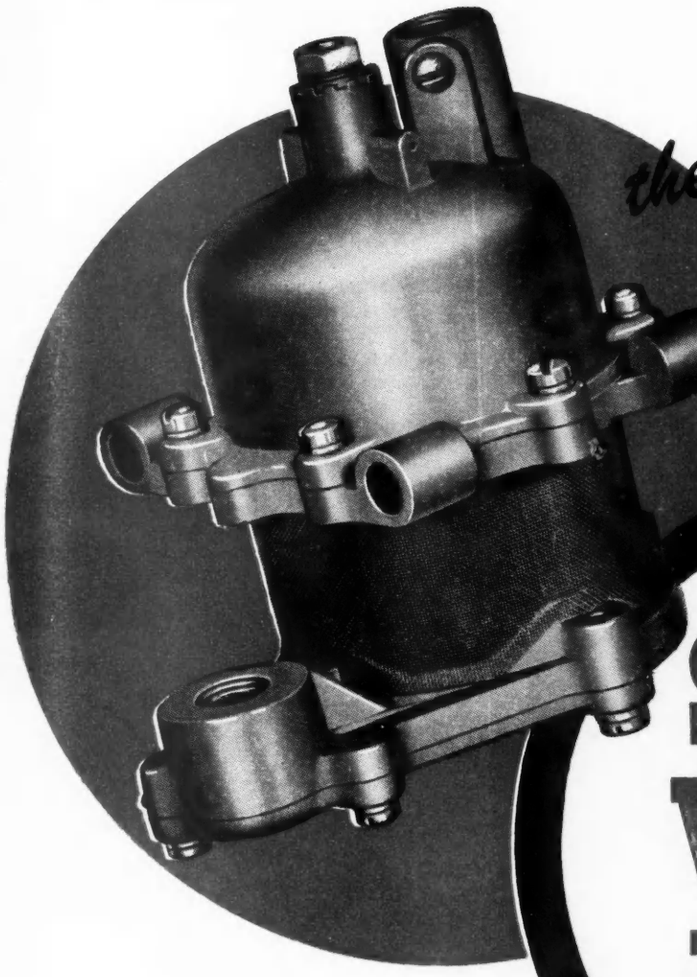
Safety is provided through the trigger switch, which must be held closed to provide heat. The current is broken the minute the finger is removed from the trigger and the tool is laid on the bench, thus eliminating fire hazards.

Convenience is obtained through the small soldering tip which permits easy access to tight corners and makes possible a view of the parts on which the operator is working.

Use Free Postcard For More Details.

END

(Please resume your reading on P. 62)



the New CARTER Electric Pusher Pump

STOPS VAPOR LOCK

A product of the world's largest manufacturer of carbureters, the Carter Electric Pusher Pump provides the user with the same service facilities and policies that have won international goodwill for Carter.

BY KEEPING the fuel in the line under constant pressure, the Carter Electric Pusher Pump has proven most effective in preventing hard starting and loss of power and speed caused by vapor lock on hot days or after long, heavy duty runs.

Located inside and at the bottom of the fuel tank, the Carter Pump is away from the "heat zone." There are no valves between the pump and the carbureter...fuel drains back into the tank when the engine is stopped ...eliminating pressure build up with consequent flooding. Fuel for starting is supplied to the carbureter immediately.

Write at once for complete information.

CARBURETER
TRADE MARK REG. U. S. PAT. OFF.
MARCA REGISTRADA

CARTER CARBURETOR CORPORATION • St. Louis 7, Missouri
Division of American Car & Foundry Company

524

New Governor-Distributor Provides Positive Engine Speed Control

A DISTRIBUTOR with a robot mind that governs the engine speed better than the operator can with his foot is the claim of the Mallory Electric Corp., Detroit, Mich., with regard to its new assembly now available to the automotive field.

The Mallory Combination Distributor and Engine Speed Governor is said to be an improvement over the velocity and centrifugal governor. The vacuum in the intake passageway of the engine is the source of power that operates the new governor throttle, and the centrifugal valve in the distributor throttles the source of power.

The centrifugal valve is actually controlled by both centrifugal force and intake vacuum. The centrifugal force tends to close the valve while the vacuum force tends to open it, one opposing tthe other. This principle is said to make possible governor action in direct relation to any change in vacuum, as well as any change in engine speed, resulting in positive control of the engine. With the Mallory governor the engine speed can be governed at any speed between 1000 and 3000 r.p.m. or over without changing a part. Engine speed is said to be smooth and free from surging at all speeds.

New Design Cuts Spark Loss

One of the most revolutionary parts of the distributor is the circuit breaker and contact point assembly. The breaker is of a design to give a minimum of flashing. The contact points are of extra large diameter, mated at the factory. The circuit breaker post is mounted on a special bracket instead of on the circuit breaker

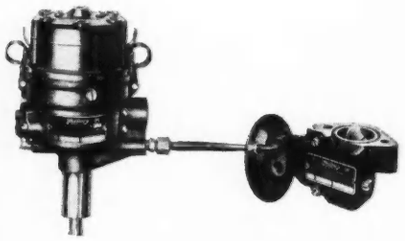


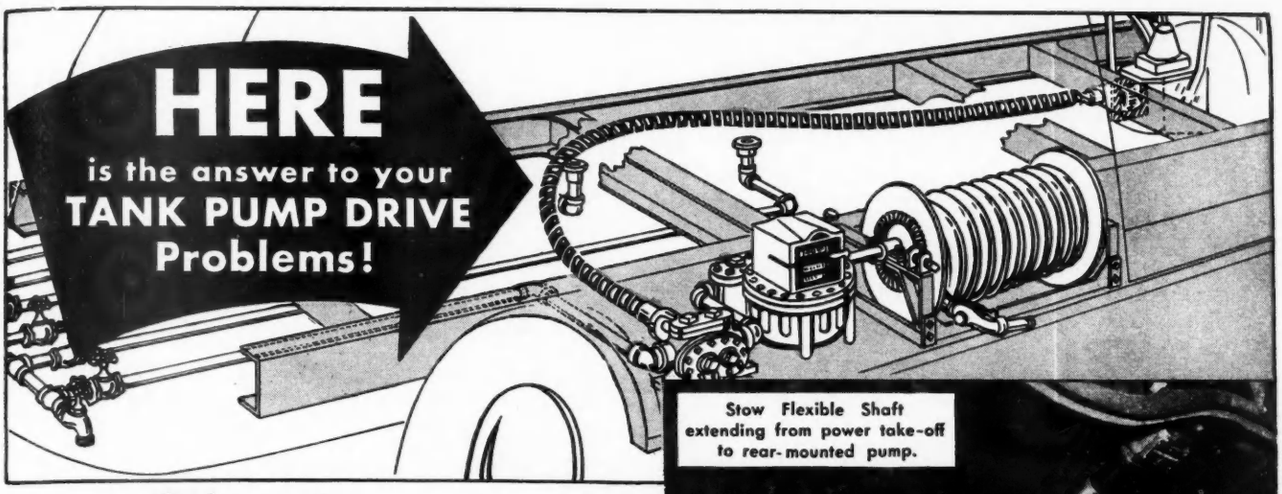
plate. The rotor in the assembly makes almost 100 per cent contact with the distributor segments, eliminating much electrical resistance. The low resistance between the rotor and distributor segments is due to the fact that the rotor blade travels on a rail which is machined flush with the segments. The segments as well as the rotor sweep are of special metal instead of brass or bronze, and do not oxidize easily. For these reasons, spark loss is claimed to be very low.

A new method of sealing the high-tension wires in the distributor cap is another new feature. Sealed connections prevent any moisture from collecting between the wires and the terminals, and in turn prevent breakdown of the insulation from one terminal to another.

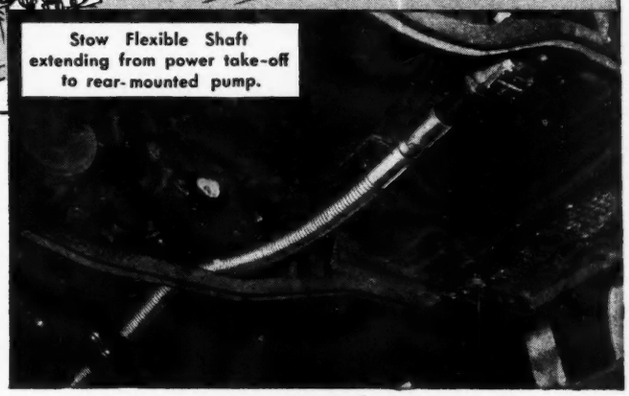
The distributor is balanced so that the standard or regular equipment six-volt coil can be used with it. However, the special Mallory coil is said to give best results.

There are several models of Mallory distributors available. The Models ZG and YG have a centrifugal valve mounted on the distributor shaft under the ignition governor. This acts as a control for the governor throttle box which is located under the carburetor. The Model ZG has both mechanical governor and vacuum spark advance, while the Model YG has only the mechanical governor spark advance.

Models ZB and YB have no centrifugal valve and cannot be used in conjunction with the Mallory Governor Throttle Box. Models ZG and YG distributors, which work in conjunction with the throttle box, can be installed on almost all engines from four to eight cylinders and are supplied from the factory with the proper spark advance for the engine on which they are to be installed.



Stow Flexible Shaft extending from power take-off to rear-mounted pump.



✓ Check THESE 10 Superior Features

1. The pump can be installed wherever most convenient for frequent inspection, regular lubrication, and proper attention to packing!
2. Pump, meter, and reel can be assembled as a compact unit *anywhere* on the truck!
3. The smooth working of the Stow Flexible Shaft minimizes wear on pump packing and bearings — helps avoid leaky pumps!
4. Stow Flexible Shaft reduces end thrust on power take-off and pump shafts — keeps maintenance at a minimum!
5. Requires less piping — cuts piping costs — fewer joints result in less leakage!
6. Totally enclosed shaft assures complete safety!
7. Use of Stow Flexible Shaft saves lay-ups — keeps trucks in continuous operation — assures trouble-free service!
8. Stow Flexible Shaft automatically compensates for relative movement between the pump and power take-off resulting from distortion of the chassis frame caused by uneven roads!
9. Stow Flexible Shaft is engineered to absorb all shock loads!
10. Stow Flexible Shaft can be installed by any mechanic. The facilities of an ordinary garage are adequate. Installation cost is a fraction of that of any other drive!

STOW Flexible Shaft TANK PUMP DRIVE

is easily installed, requires minimum maintenance, has a proven record of service performance, and most important..

KEEPS YOUR TANK TRUCK IN SERVICE!

●

Write today for full information on this widely popular new Tank Pump Drive! It's the the best answer to a particularly difficult engineering and operating problem. Saves money all the way! Easier and cheaper to install . . . easier and cheaper to operate and maintain!

Mail This Coupon NOW!

STOW
MANUFACTURING CO.
38 Shear St., Binghamton, N. Y.

Please send me — at once — full information about STOW Flexible Shaft Tank Pump Drive. ☐ New equipment. ☐ Replacement.

Name..... Position.....

Company.....

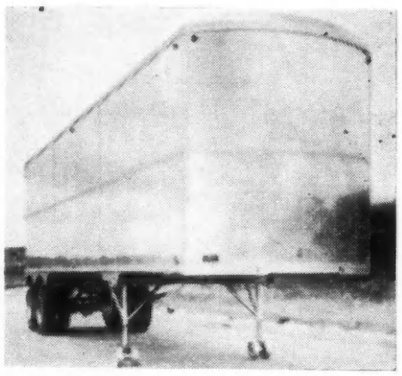
Street..... City..... State.....

New Trailer Construction Cuts Weight 600 to 5000 lb.

One of the most interesting features of the Southern California Truck, Trailer and Accessory Show just completed was the introduction of the new trailer of an entirely new design by the Transland Co. of Hermosa Beach, Calif.

The trailer is of all-aluminum construction with the exception of wheels, axles, rear-end assembly and king pin. It is the first freight trailer constructed to aircraft specifications.

By employing the principle of monocoque construction used in aircraft, wherein the sides and roof are utilized to create additional load support, Transland has succeeded in reducing gross weight from 600 lb. to as much as 5000 lb. per trailer for trailers of identical capacity.



This 35-ft. model weighs only 8730 lb.

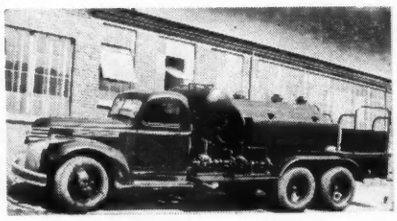
The 35-ft. model illustrated weighs only 8730 lb. gross fully lined. When fully loaded, the longitudinal frame deflection is less than .25 in. By use of a new type dural ribbed interlocking floor construction, a floor capacity of 1000 lb. per square foot is achieved and floor weight is reduced 300 to 1000 lb. per trailer.

A few of the many unusual features of the Transland trailer are its 9-in. molded rubber bumper blocks, Air Corps-approved riveting throughout, aircraft type landing gear and "Feather Ride" rear-end construction.

Special Refueling Unit Carries Service to the Job

The F.A.B. Mfg. Co., Oakland, Cal., has designed and delivered to nine Hawaiian Island plantations a special field service truck to handle the problem of refueling and service. The unit takes this service to the equipment wherever it may be located.

Since this truck has a g.v.w. of over 20,000 lb. and since it must be prepared to go anywhere, the Fabco Dual Drive becomes a very natural part of its equipment. Giving the truck a second driving axle and ten 7.50 x 20—8 ply tires under the load the truck has a rating of 26,000 g.v.w. The Fabco Transfer case with eight speeds forward and a low-low of almost 100 to 1 helps its performance where the going is soft.



The servicing equipment consists of an air compressor mounted behind the cab rated at 14. cu. ft. per 400 r.p.m. which can be operated so that it will have a final capacity of 29 cu. ft. Above it is mounted a 120-gal. capacity air receiver. There then follows a three compartment tank—310 gal. of gasoline; 310 gal. of diesel oil, and finally in the rear 100 gal. of water. Along the sides are four 25-gal. lubricating oil blister tanks while on the rear there are two tool box compartments to serve as seats for the crew.

For dispensing the gasoline and diesel oil there are supplied Roper gear pumps driven by Thor air motors pumping through Brodie meters to 15 ft. hoses. Alemite air lines and grease lines mounted on reels are provided for tire servicing and greasing. The unit is complete to do any truck, tractor or equipment servicing that may be required.

SERVING THROUGH SCIENCE

Finger Tip Resilience!

...YET SUPPORTS "HEAVYWEIGHTS"

If you took the "bounce" in a good tennis ball...controlled it, adapted it scientifically for a cushioning and mattress material, then you'd have Koylon Foam!

And what's its secret? Koylon Foam combines the natural resiliency of pure latex with the buoyancy of air. It actually "breathes"...absorbs air in millions of tiny latex cells—releases it on contact with the body. Result: a resilience that's matchless for comfort!

The beauty of it all, too...there are no mechanical parts—no springs—to wear out ...no stuffings to bulge or sag. This means lower maintenance costs. Further, eleven years of testing on major railroads prove that Koylon Foam adds to seat upholstery life.

That's why we say: If you sell "seats"—or "sleep"—better sell Koylon Foam!

Comfort Engineered for Sitting and Sleeping

"U.S." Koylon FOAM

REG. U.S. PAT. OFF.

"U. S." KOYLON FOAM DIVISION • MISHAWAKA, INDIANA

UNITED STATES RUBBER COMPANY

Assembled Magnesium Body Saves 1800 Lb.

The magnesium body illustrated on this page was recently fabricated for the American Stores Co. by Barry & Baily Co., Philadelphia. Inside dimensions are: 15 ft. long, 86 in. wide, 75 in. high. Complete with 2 in. of fiberglass insulation, it tips the scales at 2100 lb. nearly 1800 lb. lighter than a comparable body of steel.

Conservatively estimating his extra payload at 1500 lb., Fleet Superintendent William J. George of American Stores figures the additional $550 investment should pay off within a reasonably short time.

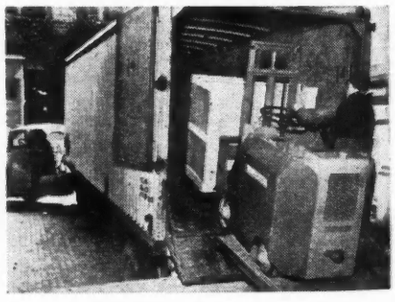
Except for the 1⅛-in. oak flooring, ½-in. plywood lining and insulation, all parts of the body are magnesium, supplied in ready-to-assemble extruded shapes by Revere Copper & Brass, Inc., New York. These extruded shapes not only permit unusually smooth contours particularly at the corners and along the roof shoulder, but also enable the manufacturer to put the bulk of the metal exactly where needed most to resist bending loads. In addition to sheet siding, these pre-formed shapes include floor beams, corner posts, side posts, roof carlines, roof shoulders, rub rails and crown rails.

Pre-formed parts are supplied in ready-to-assemble extruded shapes

New Towmotor Features Side-Mounted Motor

A new addition to the "one-man-gang" lift trucks made by Towmotor Corp., Cleveland, Ohio, is the sturdy yet compact Model LT-35 which makes its debut with a side-mounted motor engineered to cut wheelbase lengh to 35 in. Placement of the motor on the side reduces overall length without sacrifice of strength, according to the manufacturer.

The Model LT-35 weighs only 2800 lb. but will lift, carry and stack a 1500- or a 2000-lb. load in areas previously inaccessible to lift truck operation such as tight aisleways, elevators and the crowded confines of highway trucks and freight cars. Its comparatively light weight also makes operation possible on 2-ton capacity elevators and in multi-story buildings with low to medium load limits. Lifting and tilting mechanisms are hydraulic.



Engine, transmission and axle units are easy to get at for maintenance inspections and adjustments, while quick removal of a side plate permits all electrical and carburetor adjustments.

Good for old equipment,

this DOUBLE-DUTY OIL

is still better for new!

Quaker State HD Oil for your trucks, buses, and tractors
Quaker State Motor Oil for your passenger cars

QUAKER State HD Oil earned a wonderful reputation keeping precious motorized equipment on the job during the past four wartime years—years when the going was really tough and double protection was *vital.*

Now that you have, or are going to get, new equipment, you'll want to protect it with the oil-wisdom you gained using Quaker State HD Oil. Good for old equipment, this DOUBLE-DUTY oil is still better for those new ultra-modern trucks and buses.

You have a big investment to protect—sharper competition to meet. You'll need to watch expenses closer—get maximum earning power out of your equipment at lower cost. Quaker State HD Oil—the DOUBLE-DUTY oil—can help you do it! Quaker State Oil Refining Corporation, Oil City, Pennsylvania.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

ADVANCED WIDER RIM PROGRAM

(CONTINUED FROM PAGE 41)

their rubber. If on the other hand, it is found that that existing equipment falls within the second group of figures in the table, then a study of the figures in the particular size will suggest whether additional changes are warranted. For instance, if 9.00 tires are mounted on 7.33 rims, no change would be warranted for the Advanced rim program actually recommends a slight decrease in the particular ratio. If, on the other hand, a 7.00 tire is mounted on a 5.00 rim, it will be noted that considerable improvement may be expected by shifting to the 5.5 Advanced (or 5.50 in the interim size) rim.

In considering tire-rim size relation of present equipment another important factor should be noted. As indicated before, a 10.00 tire on a 6.00 (old 8-in.) rim is no longer recommended. This is also true of 7.00 tire on a 3.75 (old 5 in.) rim; a 7.50 tire on a 4.33 (old 6 in.) rim, and a 9.00 tire on a 5.00 (old 7 in.) rim. It would be good business to shift these sizes as soon as possible.

Availability

AS NOTED in the opening paragraph, not all of the new Advanced wide base rim sizes are yet available even on new truck equipment. As new models are announced, it is expected that most truck manufacturers will swing to the wide base program either as standard or optional equipment. The maximum 96-in. vehicle width may cause some exceptions to this change.

In the meanwhile, the best advice to fleetmen is to check up on present equipment, consult rim and tire suppliers as to the availability of wider sizes either of advanced or interim design, and to watch rim sizes carefully when ordering new vehicles. Most dealers are prepared to assist in changeovers even if they are not available from the factory.

Tubes and Flaps

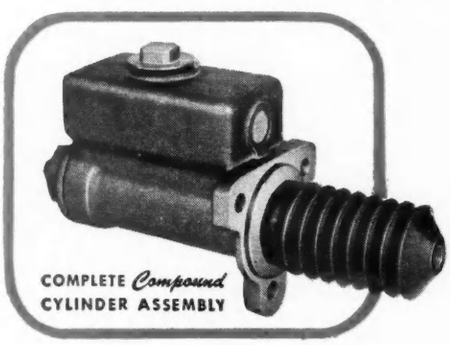
IN NEARLY all cases where the base of the rim is increased by as much as ½ in., the next larger size tube and flap are required. An exception is use of the new "W" type tubes now getting into production by all major tire suppliers which have the proper dimensions to fit the standard tire for which they are size branded, regardless of the rim width used. To be on the safe side, be sure to check this point with your tire supplier.

(TURN TO PAGE 180, PLEASE)

The Los Angeles Transit Lines uses two of these Mack emergency trucks powered by diesel engines to help keep that city's transportation system up to its high performance standard. Each of these units is equipped with a Hutchins 20,000-lb pull winch, as well as such items as acetylene torch, track bridges, trolleys, fire extinguisher and jacks. A twoway radio helps insure prompt arrival of aid at any trouble point

NEED A POWER BRAKE EXPERT?
You Don't . . . If Your Brakes Are HYCON

CONTROLLED BRAKING



COMPLETELY HYDRAULIC

HYCON
Compound CYLINDER

Eliminates brake lag, improves safety factor, simple and quick to install, cuts tire wear and fuel consumption, reduces maintenance.

Any mechanic in your garage can replace a balky, defective master cylinder with a HYCON *Compound* Cylinder within an hour. Just disconnect and remove; then bolt HYCON into place. No extra tubing required; no holes to drill. HYCON is a compact, self-contained unit; amazingly simple in design, fast to install and thrifty in maintenance.

Eliminates "Booster"—Cuts Expense

You can't have appendicitis if your appendix is removed. You can't have "Booster" trouble with HYCON, because the "Booster" has been removed. HYCON is 100% hydraulic; no need for the extra attachments for vacuum or air actuation. This cuts out brake lag and gives positive braking control at all times and under all conditions. Braking pressures are automatically in correct proportion to pedal pressures, which prevents over-braking, skidding and tire-scuffing . . . an important factor in both safety and economy.

Test HYCON on Your Own Trucks

You can prove the economy and better performance of HYCON *Compound* Cylinders by installing them for a test on your own trucks. Units are now available to replace 1¼" and 1½" Di. original equipment master cylinders. Order a trial unit from your own power brake distributor or write to The New York Air Brake Co., 420 Lexington Avenue, New York 17, N. Y.

Look for the Registered Trade Mark

THE NEW YORK AIR BRAKE COMPANY

420 Lexington Avenue, New York 17, New York

ADVANCED WIDER RIM PROGRAM

(CONTINUED FROM PAGE 178)

Clearance

ANOTHER word of caution must be said with regard to clearances. Surprising at first is the fact that use of wide base rims increased the spacing between dual tires. This becomes clear, however, when it is realized that wider rims increase the center to center spacing of the tires which more than offsets the slightly wider tire cross section.

Clearance of vehicle parts such as spring hangers, frame members and the like, however, is another matter. Obviously as the center line of the inner tire is pushed inward, so also is the sidewall.

On the largest sizes, fleet operators must use care not to exceed the 96-in. maximum width limitation now in effect in most states. Table II dimensions listed here indicate how two popular tire sizes change spacing for dual use with various rim widths.

TABLE II

Tire Size	Rim Size	Overall Width of Dual Tires Based on TRA Minimum Dual Spacing	
		With Chain	Without Chain
10.00	7.33V	23.75 in.	22.85 in.
	7.5	23.92	23.02
	7.0	23.52	22.62
	8.00V	24.32	23.42
	7.00T	23.52	22.62
11.00	8.37V	25.55	24.65
	7.33V	24.70	23.70
	8.0	25.27	24.27
	7.5	24.87	23.87
	8.00V	25.27	24.27

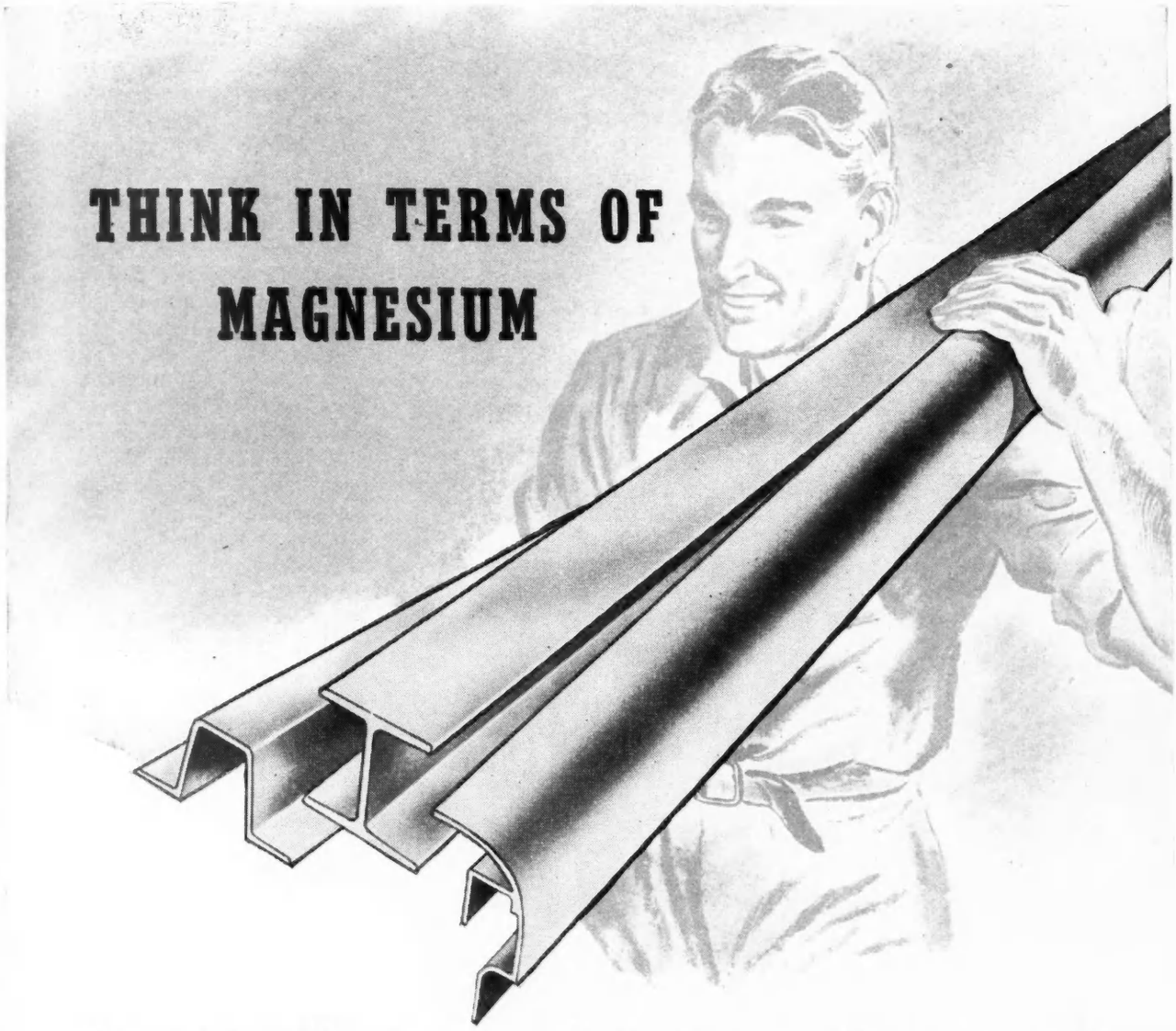
16-In. Drop-Center Wheels

ALL the foregoing concerns the use of truck tires mounted on flat base rims and should not be confused with vehicles now in commercial use in the ½, ¾ and 1 ton classification using adaptions of passenger car chassis and wheels equipped with standard full-drop center rims. Operators using this type of equipment during the war period often experienced a high rate of failure and, as a consequence, some of these operators converted their existing wheels by a welding process to the use of semi-drop center rims, with a 5.5 in. width between the flanges.

It is expected that, as the postwar production shortages of material have been overcome, standard new wheels, equipped with 5.5 or 5.50 in. semi-drop center rims, will

(TURN TO PAGE 182, PLEASE)

Ocean fresh shrimp are rushed from Florida shores to New York restaurants in a matter of hours by the Southern Fisherman Express, Mr. W. W. Hughes' new tractor-trailer motor fleet. The latest addition to Mr. Hughes' fleet, trailer finished by Fruehauf and tractor by White Motor Co., is specially designed to handle fresh seafood. The unit shown here was finished in "Dulux" Gray Suede —a very pale gray tint—with "Dulux" Boatswain Blue trim



Consider these extruded shapes, for example

These extruded shapes were produced by American Magnesium Corporation for body builders who appreciate the value of cutting topside weight to a minimum. Used as top rails, roof bows, side posts, and the like, they've proved their ability to help increase payloads while also reducing operating costs.

The extrusion process places metal exactly where it's required for strength and utility. No need to rivet or weld on excess metal to build up complicated members. So, to the natural lightness and high strength of magnesium, is added this efficient method of fabrication.

Magnesium extruded shapes, castings, and other products are available through Aluminum Company of America, Sales Agent for American Magnesium products. For further information, call the nearby Alcoa office, or address your inquiry to 1719 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

REG. U. S. PAT. OFF.

AMERICAN MAGNESIUM CORPORATION
SUBSIDIARY OF
ALUMINUM COMPANY OF AMERICA

ADVANCED WIDER RIM PROGRAM

(CONTINUED FROM PAGE 180)

be made available for this class of vehicle. In the meantime, the conversion of the existing wheels by a cutting and welding process has proven extremely satisfactory in practical operation, particularly in retail urban delivery operations.

Users of wheels converted in this manner have reported amazing savings—not only in tire mileage, but also in the relative freedom of tire failures and vehicles out of operation on delivery routes because of premature tire failures.

Background

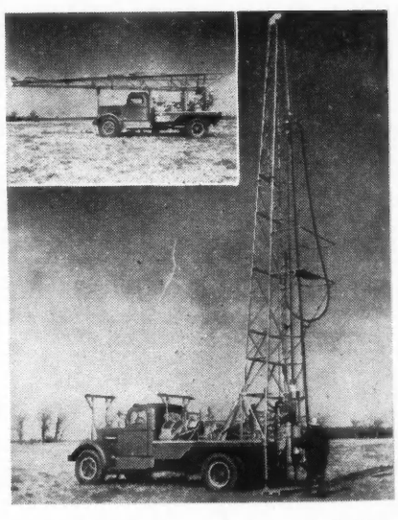
THE evidence is strong that the wider base rim program is sound. As stated above, there was concrete evidence from those who made the first step that tire "tread life" could be increased up to 30 per cent. Now the program has been rounded out in the form of the full Advanced wide base plan to make these benefits practically universal throughout all tire sizes. Let it be emphasized that the same increase in tire life over the first wide base step up is *not* obtainable through a further step up to the new Advanced plan.

In some cases, increased service should be expected, but especially in the larger sizes there will not be much difference between the results obtained by the first step up and by the second. The important thing is to find out where each vehicle stands in the rim-tire size ratio and make sure it is reaping the maximum possible benefit by the use of wide base rims, whether it be a step up between old standard sizes, a change to the interim type rim or to the new advanced designs.

Who are the sponsors of this program? They are the Tire and Rim Association and the Rubber Manufacturers Association, representing both the tire and rim manufacturers, and the National Wheel and Rim Association representing the replacement rim suppliers throughout the Nation.

END

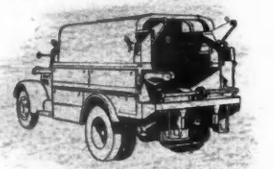
(Please resume your reading on P. 42)



A good example of efficient oil drilling equipment is found in the combination of White Super Power truck and Failing drill unit recently delivered to Leonard Hitshew of Sheridan, Wyo., for exploratory drilling in that area. This unit is rugged and powerful and well able to negotiate rough, off-the-road terrain to the site of drilling operations. Once there, it can be quickly set up to explore the stratas underground. The drill tower, which extends more than 50 ft. into the air when ready for operation, can be folded over the truck when traveling

BETTER EQUIPMENT MAKES POSSIBLE BETTER STANDARDS of PUBLIC SERVICE

American's renowned "store-room on wheels" has many standard features . . . Ask for the new bulletin, just off the press, on American's Line Construction Bodies . . . shows dimensions, sizes, equipment, features, and other useful data.



Another example of standardization . . . by incorporating crew compartment in body, American removes cab from the "special" to the standard class, offering ready resale on open market. Ask for new bulletin on the American B-4.

AFTER WORLD WAR I, America showed the world how mass production could lower the price of goods . . . place them within reach of millions and create a higher economic standard of living than any other people ever achieved.

This time, industry foresees another opportunity to progress still further in the development of high production at lower costs . . . *through the intelligent application of efficient standardization.*

In the utility field, American Coach translates standardization as a means of reducing distribution costs while improving the already high standards of service to the public. This company, as the largest manufacturer of utility bodies, will aid utilities to achieve the objectives by continuing to design and build standard "special" bodies.

Standardization is not new with us. American bodies are made of standard parts to permit easy maintenance and assembly line production. Gadgets and trick features purposely have been left out. To put "special bodies" in the standard class, as we have done, requires ample resources of facilities, personnel, engineering, and experience. *We have them.*

Equally important, many of our features have been developed and adopted at the suggestion and recommendation of the operators as a result of field experience in using this equipment.

ACB and

THE *American* COACH and BODY COMPANY

9503 WOODLAND AVE., CLEVELAND 4, OHIO

"Baker American" . Baker Equipment Engineering Co., Richmond, Va. . Sales and Assembly

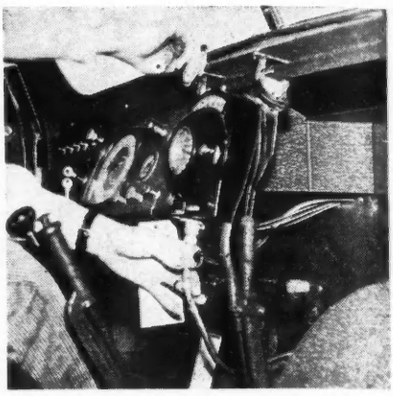
FWD Announces Scientific Break-in for New Trucks

Rigid control of FWD trucks during the break-in period is a new service being offered by The Four Wheel Drive Auto Co. Exact standards of driving speed, greasing and lubrication have been set by the service department of the company after exhaustive tests of the effect of speed, load and other factors on the working parts of trucks during their initial driving period in order to increase the strength of the moving parts.

The manufacturing processes of the company has therefore been extended to the first five hundred or more miles of travel of FWD trucks through careful driving of the trucks from the company's factory in Clintonville to customers and dealers by Arco Carriers, Inc.

Highly trained drivers of the drive-away company are briefed before each delivery on the speed the trucks should be driven the first 100 miles, the next 400 miles and the additional miles traveled while enroute to dealer or customer. The driver is familiarized with the standards of inspection and lubrication established by the FWD service department.

Each truck is equipped with a tachograph which is installed by the driver when



the truck leaves the factory. The tachograph gives a constant, minute by minute record of the speed traveled. The driver is warned by a flashing red light when he exceeds the tachograph speed setting.

Regular checks are made on water and oil. Universal joints are greased daily and complete oil change and lubrication is required each 500 miles. Engine oil specified by the FWD metallurgical department is furnished for each oil change on route before the truck leaves the factory.

The daily reports, tachograph discs and final report are filed by The Four Wheel Drive Auto Co., and are available for inspection by the new FWD owner. The rigid truck inspection standards set by the company assure him that his truck has been scientifically broken-in while enroute to him, and is ready for the job.

BODY DESIGN SERIES

(CONTINUED FROM PAGE 63)

give the greatest amount of light coverage for the plate, a removable hanger rail bracket which allows the rail to be removed in one quick simple motion, recessed rear door handle for clean smart appearance at the rear and a full width recessed rear step which aids appearance and affords more than ample step area for safety, speed and efficiency in rear end delivery operations.

Depending upon the vocational use of the unit additional features would include rug racks, tie rings, deep well rear loading areas for tall articles and a variety of rear end door, curtain and tailboard arrangements.

In addition to the polished steel or aluminum background panel a two toned color scheme is recommended. The colors selected are recommended to be suggestive of the vocation in which the body is used. For example, shades of blue for laundries suggesting cleanliness, shades of brown for bakeries symbolizing wheat, shades of green for florists, and so on.

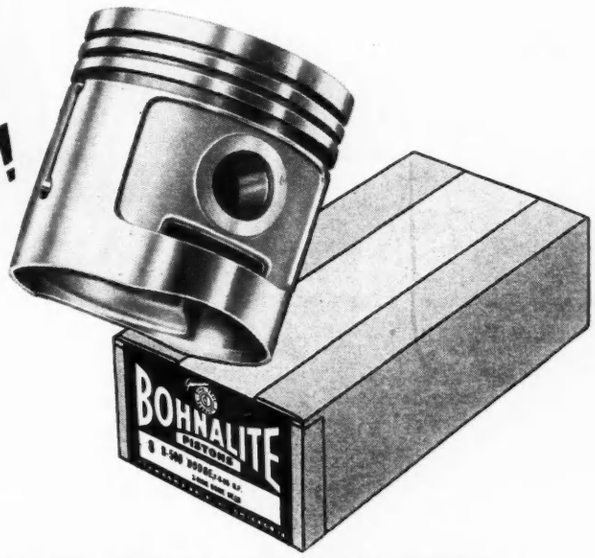
END

(Please resume your reading on P. 64)

The best in Bearings!

THEY'RE BOTH "RING-TRUE" PRODUCTS!

The pick of the Pistons!



● When you want the very finest, look for the "Ring-True" label of Clawson & Bals on the package! It identifies not only engine bearings, connecting rods, and pistons, but a whole line of automotive parts. For information, write your C & B Jobber, or Clawson & Bals, Inc., 2508 So. Michigan Avenue, Chicago 16.

GET TO KNOW THESE OTHER "RING-TRUE" PRODUCTS

Hydraulic Brake Parts

Flexible Hose Assemblies

Hydraulic Brake Hose

Genuine RING-TRUE C&B PRODUCTS

CLAWSON & BALS, INC.

FACTORY STOCKS IN PRINCIPAL CITIES

REALLY COMPLETE ENGINE BEARING AND CONNECTING ROD SERVICE

Light, Standard Bodies for Utility Companies

A standard utility body which can be mounted on a ¾-ton or 1-ton chassis is now available to gas utility companies. It is a development of The American Coach known as the American Gas Meter Instal- & Body Co. of Cleveland, Ohio, and is known as the American Gas Meter Installation Body, Type 4750.

This unit, of all metal construction and weighing 925 lb., is 90 in. in length and 72 in. wide. It can be used for routine meter changing, general maintenance and repair work.

Side boxes and sliding tray can be equipped with meter compartments accommodating 31 gas meters, or iron gas meters can be substituted if desired. Side boxes can be equipped with meter compartments which will hold seven (10-light) and seven (5-light) meters. Twelve (5-light) and five (10-light) meters can be carried in the sliding tray.

Much forethought was given to safeguarding meters from damage. Meters are securely held in the meter compartments by individual elastic straps and each compartment is padded on all sides and bottom with special high-grade sponge rubber pads, held with pressed steel welded frames.

The lower compartments on both sides are equipped with bins for fittings of all sizes, tools and miscellaneous equipment. Provision has been made for a locker with individual door and lock inside of the upper right hand compartment. Up to 7½ ft. meter keys can be carried inside of compartment with access from rear of the body.

Optional equipment includes: (1) A sliding tray which is the full length of the body and located between the side boxes. When this tray is removed, the unit can be used for hauling gas stoves or refrigerators. (2) Keyed locks for all doors. (3) A removable tarpaulin cover, above the side boxes or over the sliding tray only, for protection against adverse weather conditions. (4) A pipe carrier rack mounted on the left side of the body with light duty hold-down clamps. (5) A pipe vise carrier bracket can be mounted on the right rear panel with disappearing pipe support bracket on the front panel.

Bodies can be purchased in prime or finished in standard colors, crated and shipped for mounting at destination, or can be mounted at the factory when chassis is provided.

Standardization of the shell of this body with various meter capacity combinations and methods of carrying fittings, tools and supplies has effected lower cost and quicker deliveries.

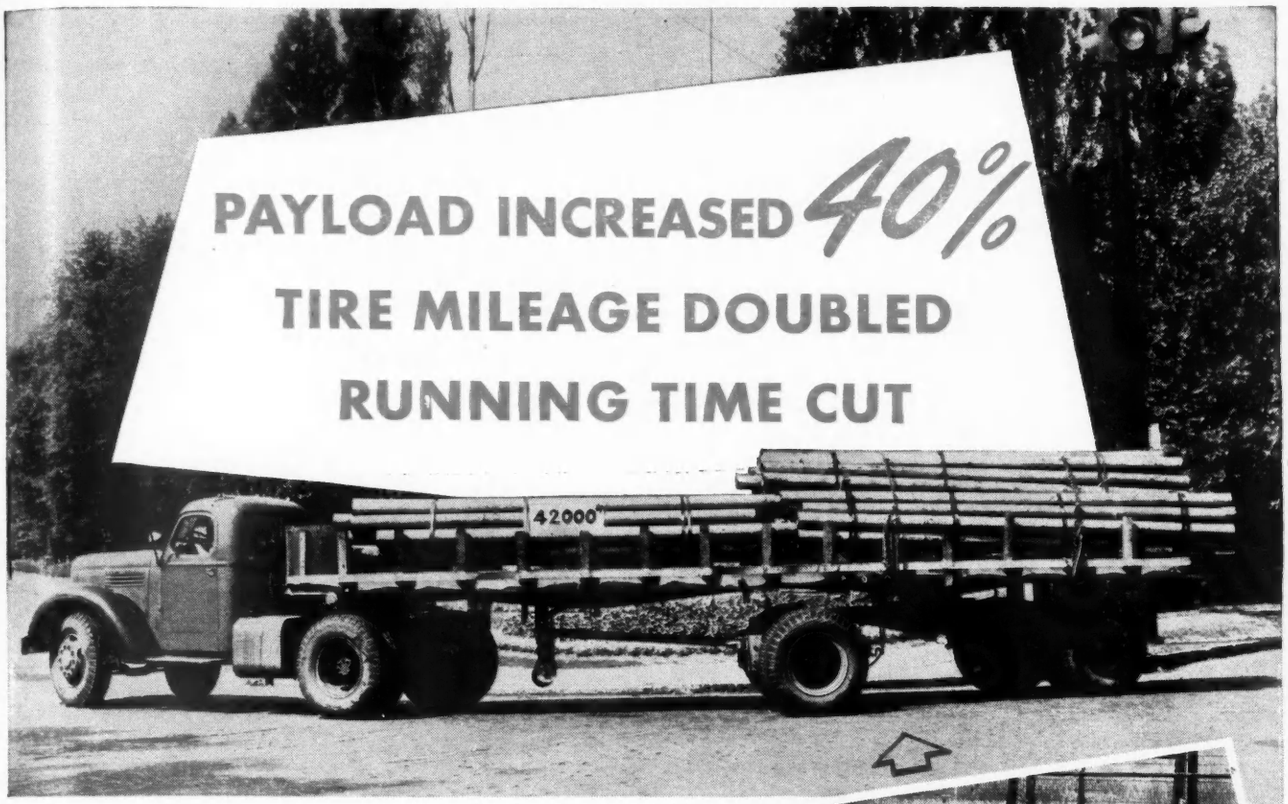
Inspection and Maintenance of Fire Extinguishers

Fire protection authorities constantly urge proper maintenance and annual inspection of fire extinguishers to assure satisfactory operation in emergencies. The usual annual inspection may, however, be inadequate for the "EAS" devices (extinguishers approved by the Underwriters' and Factory Mutual Laboratories under Emergency Alternate Specifications) produced during the war, when lack of critical materials made necessary the use of substitutes.

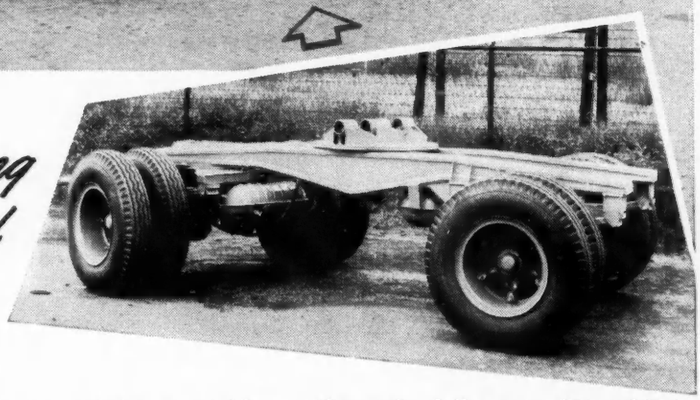
For instance, the shell of all 2½-gal. pressure units bearing EAS approval was made of steel instead of the copper which is used for the shell of the standard extinguishers. The inner cylinder of foam extinguishers, normally of tinned copper, was made of steel coated with porcelain enamel which was also used in place of brass in the construction of the pump in EAS pump tanks. Subject to cracking, porcelain enamel parts require frequent and careful inspection.

Pump packings, gaskets, and similar parts ordinarily made of natural rubber were made of synthetic rubber. Hose of all EAS extinguishers was made of reclaimed rubber. Loss of flexibility, with consequent cracking, must therefore be anticipated.

This comparison between some of the materials used in the standard units and those in their substandard counterparts will make clear why it is essential to be on guard against deterioration.



-that's what efficient designing and Republic High Strength Steel did for this undercarriage



Here's an excellent example of how automotive equipment can be improved by the designer's ingenuity and his use of Republic High Strength Steel.

This undercarriage — a two-axled, articulating support for van, high-side, flat-top and tank semi-trailers 28 feet and up in length—is made of Republic High Strength Steel welded into box-beam members.

The results: top strength for the tare weight involved — a possible payload increase of 40% — double tire mileage—and reduced running time.

Because it has a minimum yield point of 50,000 pounds per square inch and is resistant to atmospheric corrosion, this steel can be used in all types of truck and trailer equipment to lighten profit-eating deadweight—to step up payload capacity—to increase structural strength and durability.

Republic metallurgists are ready to tell you the full story of Republic's three different high strength steels —Republic ALDECOR, Republic COR-TEN and Republic DOUBLE STRENGTH — and to help you select the one best suited to your individual needs. Write to:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Bldg., New York 17, N. Y.

Republic
HIGH STRENGTH STEELS
ALDECOR • COR-TEN • DOUBLE STRENGTH

Other Republic Products include Carbon, Alloy and Stainless Steels—Sheets—Plates—Pipe—Bars—Wire—Bolts, Nuts and Rivets

Reprocessed Valves Meet New Equipment Standards

FORMATION of the Parts Processing Corp., Detroit, Mich., for the reprocessing of intake and exhaust valves for heavy duty engines and to make available a convenient exchange service for fleet operators has been announced recently. The basic product is a seasoned used valve, suitably reprocessed to meet the specifications for original equipment for all heavy duty engines, including aircraft engines. These refinished valves are Stellite-faced in accordance with best modern practice and are said to offer many times the life of conventional valves at a price claimed to be only slightly higher than that of the best alloy steel valves.

Stellite-faced valves for all popular makes of trucks will be carried in stock by distributors on an exchange basis. A custom service department is operated for reprocessing and for stocking their own shelves.

In practical operation, the procedure is to select used valves by careful inspection to assure salvage in conformity with original specifications. The heads and valve faces are cleaned and machined to take the Stellite facing while the stems are straightened and later polished to give a fine wearing surface. Following approved manufacturing practice, the valves are held in specially designed fixtures which hold and slowly rotate the valve while skilled operators apply the Stellite face. Valve heads then are packed in powdered lime to provide the slow cooling required for the annealing and toughening of valve heads and necks.

In the final operation valve faces are accurately ground to original specifications for diameter, angle, and width. Stem ends also are suitably ground. The last step is to assure rigid quality by the use of Zyglo inspection, a procedure developed by the Magnaflux Corp., for checking the soundness of non-magnetic parts. This technique, widely used by manufacturers in the automotive industry, assures freedom from porosity and surface as well as sub-surface imperfection.

Thread Replacement Simplified with Stainless Steel Inserts

A QUICK, simple method of replacing a stripped screw thread in many automotive applications has been developed by the Aircraft Screw Products Co., Inc., of Long Island City, N. Y. This system, used during the war in aircraft engines for spark plug bushings and stud bushings, is said to provide a permanent repair with an accurate thread fit. It has been successfully used in threading holes for axle drum hubs, cylinder head studs, crankcase cap screws, main bearing studs, spark plugs and many other points where stripped threads have been encountered.

Fig. 1. Drilling out stud

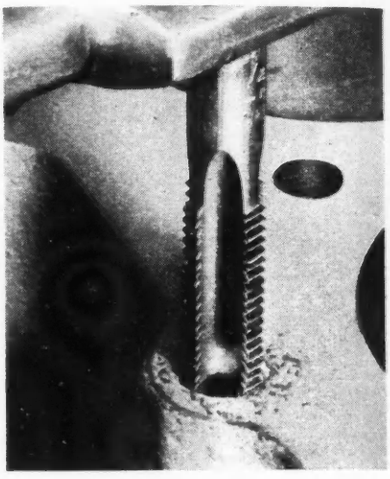


Fig. 2. Retapping the hole

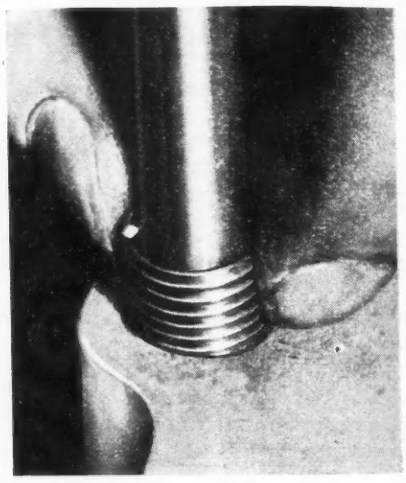


Fig. 3. Inserting Heli-Coil

Photographs on this page show an application of Heli-Coil thread repair to a stripped cylinder stud hole in an engine block. The first operation (Fig. 1.) is to drill out the remains of the old thread with a stand-

(TURN TO PAGE 192, PLEASE)

A NEW *U-Bolt Nut* THAT HOLDS PERMANENTLY

—a NEW *ESNA Elastic Stop Nut ends the greatest threat to spring life*

Loose, or unequally loaded fastenings are the most frequent causes of leaf spring breakage. More than 4,706,000 spring repair jobs have been handled annually in dealer, independent and fleet owner service shops. Many of these could have been avoided.

ESNA has a solution—the NEW U-Bolt Elastic Stop Nut that can be . . . applied to meet the original manufacturer's recommended specifications . . . self-locked in position with the Red Elastic Collar so that no amount of shock or vibration can disturb its setting . . . depended upon to carry a bolt loading of 70,000 psi with its extra-long, extra-strong body.

ESNA U-Bolt Nuts—like all Elastic Stop Nuts—are designed to prevent unnecessary repairs and reduce overhaul time. They are self-locking, easily removed, reusable. They protect permanently against Vibration, Corrosion, Thread Damage, Liquid Seepage, and Costly Maintenance. For further information address: Elastic Stop Nut Corporation of America, Union, New Jersey. Representatives and Agents in principal cities.

ESNA
TRADE MARK

The RED ELASTIC COLLAR
— denoting an ESNA product —

. . . is threadless and permanently elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ELASTIC STOP NUTS

PRODUCTS OF: **ELASTIC STOP NUT CORPORATION OF AMERICA**

THREAD REPLACEMENT

(CONTINUED FROM PAGE 190)

ard size drill of the same diameter as the stud. The second step is to retap the hole as shown in Fig. 2. This is done with a special Heli-Coil tap which is slightly larger in diameter than the standard tap.

The third operation is to run the insert into the tapped hole with a special inserting tool. This operation is shown in Fig. 3. The inserting tool slightly compresses the insert to permit it to enter the hole. With the tool removed, the insert exerts lateral pressure in the hole and locks itself in place. Action of the cap screw will not alter the position of the steel insert.

With the job completed the hole is restored to its original size and is equipped with a stainless steel liner which is exceptionally hard and is said to last as long as the block itself. The same size stud as originally used can be inserted.

When such repairs are made, the cap screws, studs or spark plugs will not seize even under high temperature, according to the manufacturer. It is said that studs will break before the insert is injured or displaced.

Tables can be furnished by the manufacturer giving the size drill, special tap, and inserting tool for any given size standard cap screw. Kits are provided for each size, consisting of tap, inserting tool and extraction tool.

Automatic Light Speeds Servicing of Federal Engines

An automatic under hood lamp, designed to aid truck operators in making motor inspections on night runs, is now being installed as standard equipment on all heavy-duty Federal trucks.

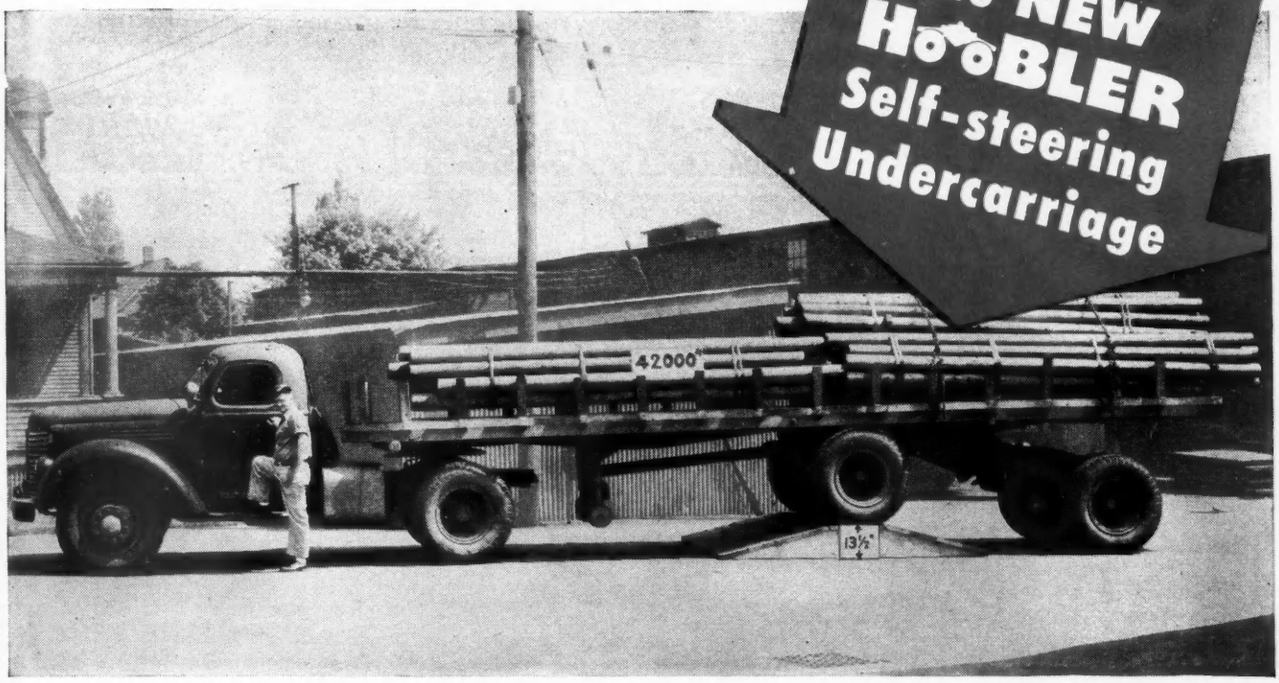
The light is a rugged self-contained unit located inside the hood and is hinged in such a manner that when the hood is raised the lamps springs into operating position causing the bulb to light automatically from a mercury switch incorporated in the base of the lamp.

Illumination from the bulb is augmented by a cadmium-plated reflector sufficient to illuminate the fuse block, distributor, oil level dip stick and crankcase oil filler. These points are often necessary to night service and inspection previously requiring either the driver to use an electrical torch, extension light or matches.

The automatic light is being installed on all Federal 45M, 55M, 60M and 65M2 series units. It has received favorable comment not only from truck drivers but also from servicemen who frequently make night under-hood inspections in dark garages or under other circumstances where outside means of illumination are either impossible or dangerous.

EGGS OR STEEL

TRAVEL FASTER, SAFER, AND AT LESS COST ON TRAILERS EQUIPPED WITH . . .



Here's why: The Hoobler Undercarriage is simple in design and construction—easily inspected and serviced. 109-inch axle spacing means a smoother ride—less shock to trailer and load. Both axles are *pulled*—not pushed. This further reduces road shock, insures fast, easy, no-chatter braking.

Self-steering feature helps stabilize load and keep it from shifting; no tire scuffing or "lead-off" on the tightest turns or straightaway; easy maneuverability through the heaviest traffic; cuts running time; requires less power to operate; reduces driver fatigue.

Easy to back, popular with drivers, the new Hoobler Undercarriage is designed for use with standard axles, brakes, wheels and tires. Available for van, high-side, flat-top or tank trailers 28 feet in length and up.

For complete details write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

Builder of The Hoobler Undercarriage

'46 REGISTRATIONS

(CONTINUED FROM PAGE 35)

Federal 139 per cent and Studebaker 137 per cent. Other companies with material gains are: Autocar, Brockway, Divco, F.W.D., Hudson and Sterling. Diamond T and Mack have about the same number of new registrations for this year as compared with 1941.

If the various companies hold their relative standing in the balance of the states, as they have in the 41 states reporting for May, Chevrolet will jump to the lead over Ford who will be in second place, followed by Dodge, International, Willys, Studebaker and G.M.C.

Given freedom from strikes and an ample supply of parts and supplies there is every reason to believe that, before 1946 comes to an end, sales for the year will have passed those for the peak year of 1941 and a new record will have been established.

END

(Please resume your reading on P. 36)

Replacement Garage Door

A replacement door for garages and shops has been developed by the Fleming Steel Co., New Castle, Pa. This Fleming Vertical Lift door can be installed in single, double, triple or quadruple sections for any size door area and is said to be ideal for replacement where door space is inadequate or where shop space is limited.

The door is installed on the outside of the building, so that wires, pipes or equipment inside the building need not be altered. The upper and lower sections traveling vertically are synchronized through gears to open or close fully at the same instant, the lower section traveling at twice the speed of the upper. When open, it gives 100 per cent clear area around the door jams. Either open or closed it occupies no space within the building.

In operation, counterweighted cables make the door easy to open by hand pulley either from the inside or outside the building. It may be operated by an electric motor from one or more switch stations. The door is being supplied to meet individual specifications.

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 84)

New Army Vehicle

The Army has developed a new utility vehicle, called the M-44, which was designed to replace the half-track. It is fully tracked and is to be used to carry anything that goes under fire, including ammunition and personnel, with a maximum amount of protection from gunfire. Approximately 72 of these new vehicles will be turned out during the next 12 months.

Site Sales Slump

The War Assets Administration's widely heralded site sale program is bogging down. Large numbers of these "sales at site" are being cancelled. The explanation seems to be that WAA officials oversold themselves on the program.

END

(Please resume your reading on P. 89)

Nellie, Oh Nellie!

The man dashed madly down the street. He overturned fruit stands and blind men in his wild chase. He ran into a perambulator, and the baby was thrown into the street. "Assassin," hissed the mother through clinched teeth, but on he rushed. Dashing into a delapidated tent pitched on a vacant lot, he shouted: Nellie! Nellie! Come quick! I have a lead on a house for rent!"

Out of Training

Having been advised by his service department that it would be morning before a road mechanic could be sent out with a replacement axle, the transport driver carefully placed his pot flares and made for a lonely farmhouse, where he asked to be put up for the night. The occupant of the house was a frowsy old maid, and she explained that there was only one sleeping room.

"That's all right," said the driver, "I'll get a pole from the fence and put it across the middle of the room. Then you'll feel safe while I'm sleeping on the davenport."

After the lights were out the old maid called across the room to her guest: "You said you were a college man. Did you go in for athletics?"

"Oh yes, I was a pretty good distance runner but better at pole vaulting."

Silence for awhile and then the old maid's voice muttering disappointedly to herself: "Well, I suppose there's times when a man gets out of training."

TOMORROW'S TIRES WILL MATCH YOUR LADY'S BONNET

Imagine flashing down the street in a bright blue truck equipped with little pink tires to match the most exquisite tones of the new plastic panels. Sounds effeminate? But it might be good advertising—and it's in the offing.

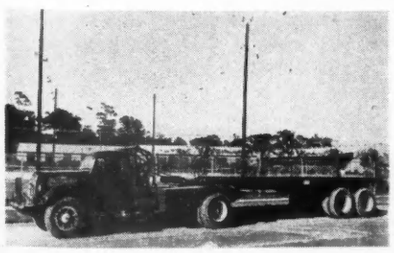
Tires of baby blue, orchid, bright red or almost any other color—to match or contrast with the color of the truck—will be practical and durable as a result of the discovery of a "white carbon-black" by the B. F. Goodrich Co.

The new rubber ingredient is a product of sand that gives rubber compounds the same qualities achieved through the use of carbon-black but without discoloration. The "white soot" is said to strengthen rubber compounds without affecting the rubber's natural or applied color.

Actually the product is not carbon at all but a powdery "fumed silica" produced by subjecting sand to a complicated series of chemical reactions with a combustion process. Under the microscope the particles have the same size and shape as the superfine ones of carbon-black and perform exactly the same way in giving rubber compounds added tear-resistance, abrasion-resistance and tensile strength without affecting the rubber's color or translucency.

Need for a non-discoloring substance to fill carbon-black's function in compounding has been intensified with the wartime switch to synthetic rubber. Use of carbon-black has prevented the use of colors in many rubber products. Even tiny percentages of carbon-black—a product of imperfect combustion of waste natural gas—in rubber compound make it impossible to achieve a clean, white end-product. Now, however, by using the new white carbon black, necessary properties can be imparted to synthetic rubber compounds and any desired color be given the product. Not only superior white sidewall tires, but tires of any color—treads and all—are possible using this new material.

There is one catch, however. Commercial utilization of the new compound is still many months away, because of its present high cost as compared to carbon-black. It may not be a commercial reality until mass production and mass use have reduced the cost. But it's on the way, so get ready to dress up those old wheels with a new "white soot" outfit.



A Mack tractor and a Hobbs tandem axle trailer combine forces for heavy oilfield operations. The truck is equipped with a Brown-Lipe auxiliary transmission, power tower and Tulsa winch

INTRODUCING . . .

(CONTINUED FROM PAGE 138)

. . . F. J. HOLLEARN, who has been named eastern district manager for the Diamond T Motor Car Co. of New York City. A recent announcement of this appointment gave incorrect company address.

. . . HENRY WARBURTON, appointed to cover sales for the Grote Automotive Division of the Grote Mfg. Co., in the states of Pennsylvania, Maryland, District of Columbia, and South Jersey. . . . And GEORGE KEARNEY for the area covering North Jersey and Metropolitan New York.

. . . MIKE LITTAUER, who has returned to the P & D Mfg. Co., Long Island City, N. Y., as southeastern district manager.

. . . VERNE A. TYLER, newly appointed manager of the Oklahoma City Division of the Wayne Pump Co., Fort Wayne, Ind.

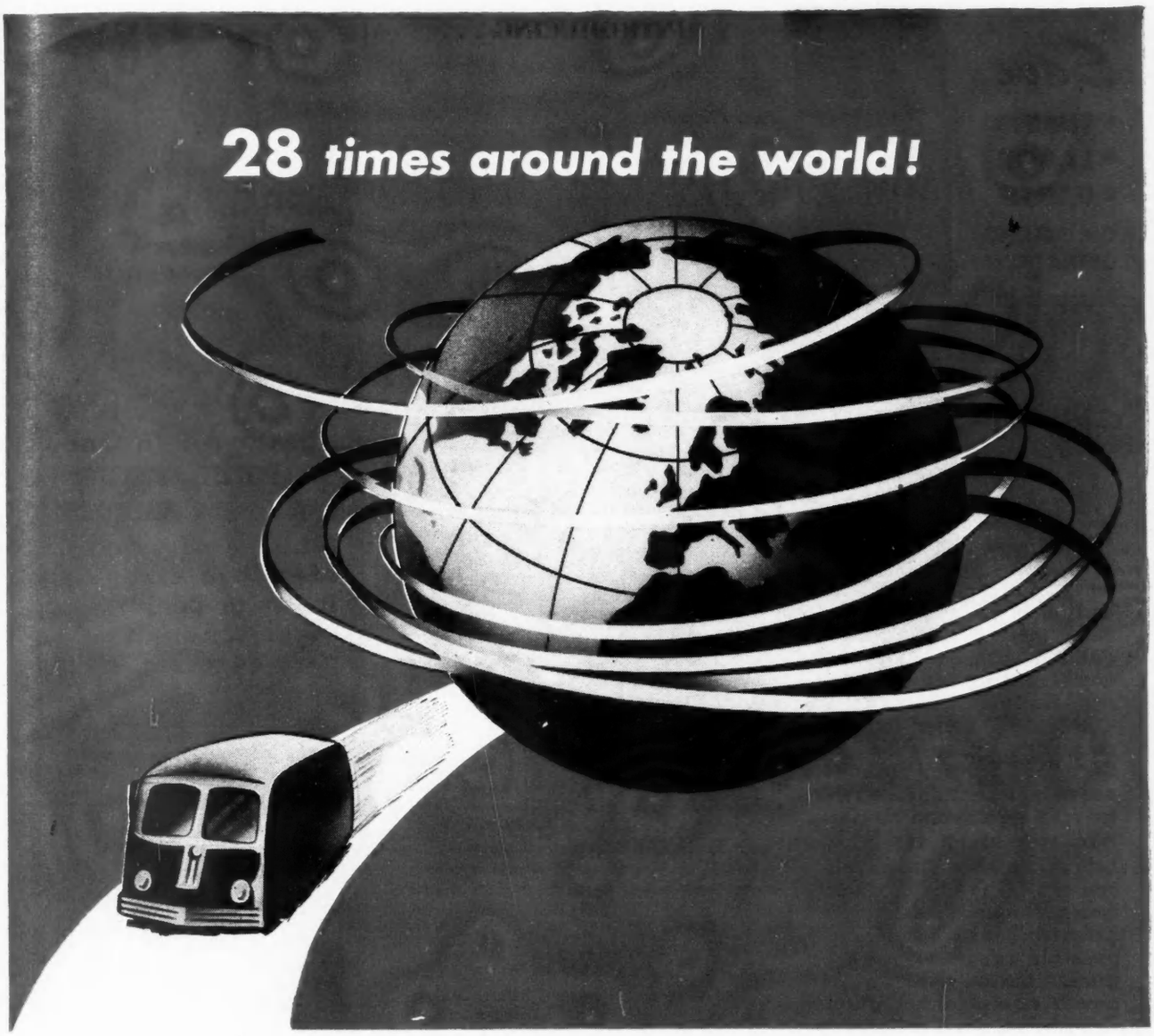
. . . J. N. MOSHER, newly appointed factory and sales engineer of the Clayborne Mfg. Co., Chicago, Ill.

. . . H. D. WEXELBERG, as sales manager of the Gross Mfg. Co., San Gabriel, Cal.

. . CAL PIERCE, as district sales manager in the states of Ky., Va., N. C., S. C., Eastern Tenn., Ala., Ga., and Fla., for the Lynch Mfg. Co. of Defiance and Toledo, Ohio

. . . EDGAR STANTON, recently named service and advertising manager of the Belden Mfg. Co.'s industrial division

(TURN TO PAGE 202, PLEASE)



a *Plymetl Truck Body outlasted four chassis in 700,000 miles of delivering

In 1924, a Plymetl panelled truck body was put into service by a nationally known candy manufacturer in Detroit, Michigan. Six years later this Plymetl panelled truck had travelled 700,000 miles — or the equivalent to 28 times around the world! Four new chassis were worn out under the body during this period.

Here is concrete evidence of the value Plymetl offers fleet owners and operators. Its light weight, impact resistance, and flat smooth surface, offers you the opportunity to have trucks and trailers that operate more efficiently, require less maintenance, carry greater pay-loads and have and retain a better appearance. For more efficient fleet operation specify Plymetl to your truck manufacturer and body builder. Write Haskelite for data and samples on Plymetl.

* *Plymetl combines the light weight and rigidity of plywood with the strength of metal. To a plywood plaque a thin sheet of metal is permanently bonded to one or both faces by our exclusive Haskelite process.*

HASKELITE
MANUFACTURING CORPORATION
DEPT. TC-4 **GRAND RAPIDS 2, MICHIGAN**

(Name on request)

New York Chicago Cleveland Detroit Philadelphia St. Louis In Canada: Railway & Power Engineering Corp., Ltd.

INTRODUCING . . .

(CONTINUED FROM PAGE 200)

. . . KENNETH RUSH, ROBERT SMITH, KENNETH MARSHAL and MIKE COSKEY have been added to the P & D staff. . . . JAMES MILES has been added as a field engineer.

. . . M. G. HUNTINGTON, as the newly appointed general manager of the Associated Tire Line Sales Division of the B. F. Goodrich Co.

. . . JOHN W. WEIGT, as manager of the New York branch of the Electric Storage Battery Co. of New York.

. . . HOWARD E. MALCOMB, newly appointed as district manager at San Francisco for the Fisk Tire Division of the United States Rubber Co. He succeeds HARRY L. ROGERS, who has been elevated to manager of Fisk truck tire sales, Pacific Coast Division.

. . . ROBERT LEGGAT-WEIT, newly designated as assistant sales manager. . . .And PRESTON W. WOLF, as assistant sales promotion manager for the General Detroit Corp. of Detroit, Mich.

. . . W. M. MARIEN, as chief engineer. . . . And CHARLES MARIEN, SR., as director of engineering for the Ramsey Corp., St. Louis, Mo.

. . . JACK L. CARMITCHEAL, newly elected vice-president in charge of sales of the Lincoln Engineering Co., St. Louis, Mo.

. . . C. T. SOENKE, as the newly appointed field engineer of the Federal-Mogul Corp. of Coldwater, Mich.

. . . HAROLD C. BARRINGER, as a new member of the sales staff of American Brake-Shoe Co. He will be an assistant in Original Equipment Sales for the company . . . ROBERT F. GOLDEN, heading the Research and Development Department of the Eaton Mfg. Co. . . . The new department of the company will be located in Massillon, Ohio . . . J. F. VAN KENNEN, as assistant general sales manager of the Aluminum Division of the Reynolds Metal Co., in charge of products. His headquarters will be in Louisville, New York.

. . . F. E. NAGLE, as sales representative in southern California and Arizona for the Pennsylvania Rubber Co.

"First mutt I've seen that wouldn't collaborate in a little innocent out-of-season hunting!"

All are carrying bigger payloads, because of the lighter weight of their aluminum tanks. All are safeguarding the oil or gasoline they're carrying, because aluminum and petroleum products get along well together. All cost less to maintain, because aluminum is naturally highly resistant to corrosive attack.

These are the advantages gained by building truck tanks of Alcoa Aluminum. Your tank builders can supply you.

ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN **ALUMINUM**

Greater Safety in Motor Transport

FOUR-WHEEL-DRIVE

A "Plus" that Pays in Many Ways!

SAFETY and profit are definitely related in FWD trucks. Four-wheel-drive makes them surer on the road . . . minimizes skidding which is both dangerous and costly.

Full power and road grip on all four wheels, provide safe traction on slippery pavements and security even on skiddy curves. Power on all wheels also makes hill climbing easier, faster . . . and assures safer travel down hill, at better speed.

Under any conditions of road or weather, running time is more uniform . . . time schedules can be maintained more dependably. More reliable trucking service attracts more business, more profit. Balanced weight distribution simplifies steering...provides better, safer control. On-the-road performance proves FWD safety pays.

It will pay you to get complete information on FWD advantages for modern motor transport — see your nearest FWD distributor or write . . .

FWD TRUCKS

THE ORIGINAL EXCLUSIVE BUILDERS OF FOUR-WHEEL-DRIVE TRUCKS

THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WIS.
Canadian Factory: KITCHENER, ONTARIO

For 36 years buyers have said: . . ."FWDs — The **BEST** *trucks built!"*